



OCALA ELECTRIC UTILITY

DEARMIN Substation

Your Ref: CONTRACT# ELE/230196

Our Ref: Q100773R

Submitted: May 25th, 2023



G-1





To: OCALA ELECTRIC UTILITY

Attention: Lisa Crouthamel

Subject: Dearmin Substation

With reference to the aforementioned inquiry, PTI Transformers is pleased to present our detailed commercial and technical offering for the below equipment:

PTI Ref	Qty	Description
Q100773R	2	105/140/175 MVA, 230 – 67 – 13.2 kV, Autotransformer

This proposal is based upon the requirements outlined as per the supplied RFP documents, and the latest IEEE / CSA standards at the time of quotation. We would also take this opportunity to confirm receipt of the following addendums:

We trust you find our offering in line with your requirements, but should you have any questions please do not hesitate to contact your local PTI Transformer representative (details below).

Engineer Power Solution LLC

Mick Cleveland

(336)337-3900

mick@epicresources.com

Thank you for considering PTI Transformers, and we look forward to supply the above equipment.

Yours truly,

Fady Gorgy
Quotation Specialist
PTI Transformers

This document contains privileged and confidential information belonging to the Sender. This information is intended solely for the use of the individual or entity addressed above. If you have received this information in error, please immediately notify the Sender.



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SECTION 1: PRICING INFORMATION

1.1. Pricing Schedule

We are pleased to submit our quotation on the following equipment. Additional details can be found in the relevant technical and commercial portions of the bid document.

Ref.	Qty	Description	Unit Price	Extended Price
Q100773R	2	105/140/175 MVA, 230 – 67 – 13.2 kV, Autotransformer	\$ 3,635,000.00	\$ 7,270,000.00
	2	Estimated Transformer & Oil Freight	\$ 148,000.00	\$ 296,000.00
	2	Estimated Offloading	\$ 93,000.00	\$ 186,000.00
	2	Estimated Field Assembly, Oil Filling, and Site Testing	\$ 95,000.00	\$ 190,000.00
		TOTAL	\$ 3,971,000.00	\$ 7,942,000.00

Note: Freight will be invoiced on cost + 5% and Field services is budgetary and firm quote will be provided 6 months prior to delivery.

1.2. Spare Parts Required

Item	Qty	Unit Price	Extended Price
LV Bushing (69 kV)	3	\$5,380.00	\$16,140.00
Core Ground Bushing	1	\$560.00	\$560.00
Gaskets	2	\$8,250.00	\$16,500.00
LV Fuses for LTC	4	\$1,500.00	\$6,000.00
1-Quart cans of touch-up paint for base coat	2	\$935.00	\$1,870.00
1-Quart cans of touch-up paint for finish coat	2	\$935.00	\$1,870.00
HV (230 kV) Surge Arresters	4	\$4,000.00	\$16,000.00
LV (69 kV) Surge Arresters	4	\$1,100.00	\$4,400.00
TOTAL		\$22,660.00	\$63,340.00



1.3. Bid Summary

Currency:	Net in USD, Taxes not included and extra when applicable
Bid Validity:	30 days from date of original submittal.
Delivery Lead Time:	Q2-2026 (units spaced 4 weeks apart), Subject to Prior Sale and confirmation at time of order.
Drawing Lead Time:	Drawing package will be submitted approximately 50 - 60 weeks prior to ship date, to be confirmed at time of order.
INCO Terms:	DDP to Site
Warranty Period:	66 months after delivery / 60 months after energization
Warranty Type:	In/Out coverage will be capped at 25% of the Unit Price of the transformer.
Payment Terms:	Milestones, Net 30 days

1.4. Price Adjustment Policy

Transformer ex-work price to be adjusted based on the FRED Electric Power and Specialty Transformer Manufacturing Index (link: <https://fred.stlouisfed.org/series/PCU335311335311>)

Price will be adjusted using the following methodology $[\text{Current Index} / \text{Base Index}] * \text{Quoted Transformer Price}$ where:

- Based Index is the value of FRED in the month of quote
- Current Index is the value of FRED 6 months prior to the Delivery Date

Price adjustment upwards or downwards will be applied to the last payment milestone.



1.5. Bid Bond Letter

	Bond Number: <u>904202242-23-01</u>
BID BOND	
KNOW ALL MEN BY THESE PRESENTS: That we, <u>PTI TRANSFORMERS LP</u>, as Principal, and <u>ATLANTIC SPECIALTY INSURANCE COMPANY</u> as Surety, are held and firmly bound unto the City of Ocala, a Municipal Corporation of Marion County, Florida (hereinafter City of Ocala); <u>in the full and just sum of FIVE PERCENT (5%) of the actual total bid amount, or FIVE PERCENT (5%) of the public construction bond amount for continuing contracts;</u> for the Bid referred to herein, in lawful money of the United States of America, to be paid to the City of Ocala, to which payment will and truly to be made we bind ourselves, our heirs, executors, administrators, successors and assignees, jointly and severally and firmly be these presents: WHEREAS, the said Principal is herewith submitting a bid to the City of Ocala for the project known as <u>OCALA ELECTRIC UTILITY</u>, and as identified by Bid/Contract Number <u>ELE/230196</u>. NOW, THEREFORE, the condition of the above obligation is such that, if the said Principal shall execute a contract and give bond or bonds, as required by the bid documents thereof within twenty (20) days after being notified in writing of the award of such contract to Principal, or if the Surety shall pay the City of Ocala the full amount of this bond, then this obligation shall be void; otherwise it shall remain in full force and effect. SIGNED, SEALED AND DATED THIS <u>23RD</u> day of <u>MAY</u>, <u>2023</u>	
PRINCIPAL <u>PTI Transformers LP</u> (Seal) Principal's Name and Corporate Seal By: <u>Dan Boyd</u> Dan Boyd 2023.05.25 08:52:50 -05'00' (Signature) Title: <u>Product Sales Manager</u> Attest: <u>[Signature]</u>	SURETY <u>ATLANTIC SPECIALTY INSURANCE COMPANY</u> (Seal) Surety's Name and Corporate Seal By: <u>[Signature]</u> (Signature - Attach Power of Attorney) Title: <u>THERESA HEDBERG, ATTORNEY-IN-FACT</u> Attest: <u>[Signature]</u>
NOTE: Power of Attorney showing authority of representative of surety must be furnished with this form.	



Power of Attorney



KNOW ALL MEN BY THESE PRESENTS, that ATLANTIC SPECIALTY INSURANCE COMPANY, a New York corporation with its principal office in Plymouth, Minnesota, does hereby constitute and appoint: **Paul Hollingworth, Greg Forsythe, Theresa Hedberg, Chelsea Fish, Irene LeBlanc, Kari Morton, Megan Quinlan, Theresa Newton, Sandra Dey, Cam Forbes, Ron Fraser, Branislav Ivica, Niki Jalali, Peter Panufnik, Scott Peberdy, Trent Percy, Betty Shellnutt, Hafis Ligali, Shella San Diego, Kimberly Basaraba, Peter Hoeg, Mario Markmann**, each individually if there be more than one named, its true and lawful Attorney-in-Fact, to make, execute, seal and deliver, for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof; provided that no bond or undertaking executed under this authority shall exceed in amount the sum of: **unlimited** and the execution of such bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof in pursuance of these presents, shall be as binding upon said Company as if they had been fully signed by an authorized officer of the Company and sealed with the Company seal. This Power of Attorney is made and executed by authority of the following resolutions adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the President, any Senior Vice President or Vice-President (each an "Authorized Officer") may execute for and in behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and affix the seal of the Company thereto; and that the Authorized Officer may appoint and authorize an Attorney-in-Fact to execute on behalf of the Company any and all such instruments and to affix the Company seal thereto; and that the Authorized Officer may at any time remove any such Attorney-in-Fact and revoke all power and authority given to any such Attorney-in-Fact.

Resolved: That the Attorney-in-Fact may be given full power and authority to execute for and in the name and on behalf of the Company any and all bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof, and any such instrument executed by any such Attorney-in-Fact shall be as binding upon the Company as if signed and sealed by an Authorized Officer and, further, the Attorney-in-Fact is hereby authorized to verify any affidavit required to be attached to bonds, recognizances, contracts of indemnity, and all other writings obligatory in the nature thereof.

This power of attorney is signed and sealed by facsimile under the authority of the following Resolution adopted by the Board of Directors of ATLANTIC SPECIALTY INSURANCE COMPANY on the twenty-fifth day of September, 2012:

Resolved: That the signature of an Authorized Officer, the signature of the Secretary or the Assistant Secretary, and the Company seal may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing an Attorney-in-Fact for purposes only of executing and sealing any bond, undertaking, recognition or other written obligation in the nature thereof, and any such signature and seal where so used, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed.

IN WITNESS WHEREOF, ATLANTIC SPECIALTY INSURANCE COMPANY has caused these presents to be signed by an Authorized Officer and the seal of the Company to be affixed this first day of January, 2023.

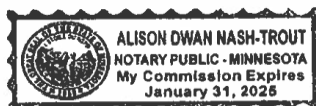
STATE OF MINNESOTA
HENNEPIN COUNTY



By

Sarah A. Kolar, Vice President and General Counsel

On this first day of January, 2023, before me personally came Sarah A. Kolar, Vice President and General Counsel of ATLANTIC SPECIALTY INSURANCE COMPANY, to me personally known to be the individual and officer described in and who executed the preceding instrument, and she acknowledged the execution of the same, and being by me duly sworn, that she is the said officer of the Company aforesaid, and that the seal affixed to the preceding instrument is the seal of said Company and that the said seal and the signature as such officer was duly affixed and subscribed to the said instrument by the authority and at the direction of the Company.



Notary Public

I, the undersigned, Secretary of ATLANTIC SPECIALTY INSURANCE COMPANY, a New York Corporation, do hereby certify that the foregoing power of attorney is in full force and has not been revoked, and the resolutions set forth above are now in force.

Signed and sealed. Dated 23rd day of May, 2023.



This Power of Attorney expires
January 31, 2025

Kara L.B. Barrow, Secretary

Please direct bond verifications to surety@intactinsurance.com

Note: The Performance & Payment Bond price adder is **\$65,000 USD**.



1.6. Exhibit E – PROPOSED DELIVERY DATE & SUBCONTRACTORS Form

Exhibit E

CONTRACT# ELE/230196

Proposed Delivery Date & Subcontractors

SUBCONTRACTORS

Please list below where subcontractors will be used to complete certain phases of work, the name and address of each proposed subcontractor are required. The Bidder has fully investigated each subcontractor and has evidence on file that each subcontractor has engaged successfully in their respective line of work for a reasonable period of time, maintains a fully equipped organization capable, technically and financially, of performing the work required, and has made similar installations in a satisfactory manner. The Bidder acknowledges and accepts responsibility for the performance of any subcontractor.

WORK PHASE	SUBCONTRACTOR – NAME & ADDRESS
Off-Loading	TBA
Hauling	TBA
Site Installation, Service and Testing (Autotransformer)	TBA
Other (Please Identify):	

E -1



Exhibit E

CONTRACT# ELE/230196

PROPOSED DELIVERY DATE

Ocala Electric Utility requires Delivery of equipment, as defined in Exhibit B – Required Specifications within the following date:

		Delivery Required	
Qty.	Description	Not Later Than	Proposed Delivery Date
2	Autotransformers 105/140/175 MVA	78 weeks (4 weeks later (Tx #2)	Q2, 2026
Including as per specifications:			
- Autotransformer 105/140/175-spare parts - Autotransformers 105/140/175-installation and testing			

The Bidder proposes to complete Delivery of Items, as listed below, including an allowance for review of shop drawings (see Exhibit A). The bidder understands proposed delivery times longer than stated above may be grounds for rejection of bid.

The Bidder agrees to deliver equipment to the designated site. Exact access requirements shall be established by on-site investigation by the Bidder. Delivery shall be completed between the hours of 7:30 a.m. and 12:00 noon, or 1:00 p.m. and 3:30 p.m. Local Time, Monday through Friday, but shall not be made on legal holidays.

The Bidder acknowledges and accepts the responsibility to place the equipment on permanent foundations furnished by the Owner. The Bidder acknowledges and accepts the responsibility to conduct the required field testing, after external connections are made and prior to final acceptance by the Owner. The Bidder acknowledges there may be a delay between the date the equipment arrives at the substation site and the date field testing can begin.



1.7. Shipping Details

INCO terms considered are per Bid Summary.

Cost based on:

- Shipping under dry air by rail to nearest rail siding
- Getting rail clearance on regular train only.
- Having clear access to the substation with road trailer used to move from nearest rail siding to site.
- Getting road trailer within 30 feet from the pad for offloading;
- Not transloading the transformer to a shorter highway trailer due to lack of access within the substation to the pad.
- Having clear access to the pad for offloading, not jacking up the transformer more than 2 feet to skid it off the trailer to the pad.
- Not rotating the transformer on site or pad.
- Having good ground conditions within the substation to withstand the highway trailer with transformer and skidding system.
- Does not include route survey, route engineering study, repair of roads, and utilities and police escorts. This, if required, are at costs plus 15% Adm fee.
- Does not included engineering stamped offloading drawings/lift plan. These, if required, will be at costs plus 15%.

Please note extra charges, if we need to drop the oil tanker.

- Two free hours for offloading on site. Thereafter a charge of CAD 150.00 per hour will apply.
- Trailer detention costs: CAD 250.00 per day/per tank
- Layover fee - CAD 1,300.00 per day/ per tank

1.8. List of Optional Recommended Spare Parts

Item	Qty	Price (USD)
HV Bushing	1	\$12,370.00
HOXO Bushing	1	\$2,260.00
TV Bushing	1	\$6,490.00
Fan and Motor	1	\$5,940.00
Gas Detector Relay	1	\$6,280.00
Pressure Relief Device	1	\$1,195.00
Oil level Gauge	1	\$995.00



1.9. Standard Field Service Rates

The following rates are applicable for personnel working within North America. Prices are subject to change.

- Per Diem:** \$2,050.00 per workday. This rate includes all time worked or traveled during a normal eight (8) hour work day or fraction thereof. A work day is considered any consecutive eight-hour period Monday to Friday (holidays excluded) with an allowance for lunch. Per Diem rate includes local traveling and living expenses only. It does not include the cost of airfare or transportation to/from the job site and personnel headquarters. All hours worked or traveled in excess of eight hours per weekday and all hours on Saturdays, Sundays, and holidays will be billed at the applicable hourly/overtime rates.
- Hourly:** \$190.00 per hour or any fraction thereof. The hourly rate is applicable to all regular workday time, including travel time 00 and time at the job site whether worked or not. A weekday is considered any consecutive eight-hour period Monday to Friday (holidays excluded) with an allowance for lunch.
- Overtime:** \$285. per hour or any part thereof. This rate is applicable to all hours worked in excess of eight (8) hours on weekdays (holidays excluded), and all time worked or traveled on Saturdays.
- Sunday & Holiday:** \$385.00 per hour or any part thereof. This rate is applicable to all hours worked or traveled on Sundays or holidays.
- Standby:** When personnel are prevented or unable to perform the services requested on the jobsite because of circumstances beyond their control, the purchaser will be billed at the applicable rate.
- Time Off:** The minimum time off for personnel during one 24-hour period shall be eight (8) hours.
- Travel:** Traveling time and expenses for each service person includes leaving and returning to headquarters. The maximum billing for traveling time at the applicable rate shall be eight (8) hours per individual for any one calendar day.

TRAVEL & LIVING EXPENSES

Hourly rates do not include any travel or living expenses.

Transportation costs to/from the jobsite and personnel headquarters shall be billed at cost.

Auto travel to/from the jobsite and headquarters, will be billed at a rate of \$0.75 per kilometer.

Copies of invoices shall be supplied.



SECTION 2: TERMS AND CONDITIONS

PTI Transformers LP (the "Seller") and **OCALA ELECTRIC UTILITY** (hereon the "Purchaser") each agree that the following terms and conditions shall apply to all contracts for the purchase and sale of the Seller's products (the "Equipment") unless they otherwise agree in writing

2.1. Shipment, Delivery and Storage

- 2.1.1 Shipment of the Equipment shall be made from the Seller's manufacturing facility at Winnipeg, Manitoba, Canada and delivered to the mutually agreed destination as per the established Incoterms. The Purchaser acknowledges that delivery dates specified in any quotation are subject to prior sale and approximate, unless otherwise specified, and that delivery performance by the Seller is dependent upon prompt receipt from the Purchaser of all specifications, final approved drawings, and any other details reasonably necessary for the proper execution of the Purchaser's order such as, but not limited to, Seller's lead time.
- 2.1.2 Claims for shortages of Equipment must be made in writing to the Seller within fifteen (15) days of the date of Delivery, or the Purchaser shall be deemed to have accepted any shortage.

2.2. Force Majeure

- 2.2.1 The Purchaser acknowledges that the Seller shall not be liable for delays in delivery performance due to causes beyond its reasonable control including, but not limited to: Acts of God; the actions or inaction of the Purchaser; fire; labor disturbances by its employees or the employees of its suppliers; floods; epidemics; quarantine restrictions; war; insurrection or riot; acts of a civil or military authority; compliance with priority orders or preference ratings issued by any government; freight embargoes; car shortages; wrecks or delays in transportation; unusually severe weather; delay of subcontractors; or inability to obtain necessary labor, materials, manufacturing facilities, or supplies. In the event of any such delay, the Purchaser agrees that the date of delivery will be extended for a minimum time equal to the period of the delay. The contract of sale will, in no event, be subject to cancellation by the Purchaser, due either to delay in delivery or to any other cause, without the prior written consent of the Seller. In case of cancellation, the Purchaser agrees to pay to the Seller a reasonable charge to compensate the Seller for its losses arising out of such cancellation, as liquidated damages and not as a penalty



2.3. Warranty

- 2.3.1 The Warranty Period for the Original Purchaser shall be **Sixty-Six (66)** months after the date of Delivery to its original destination or **Sixty (60)** months from the date of the first use of Equipment by the Original Purchaser or End User, whichever is shorter. The Seller warrants that during the Warranty Period, the Equipment shall be free from defects in material and workmanship and shall reasonably meet the specifications of the Purchaser. If, within the Warranty Period, the Equipment does not meet the warranty specified above, and provided that the Purchaser promptly notifies the Seller of any such defects in writing, the Seller agrees to correct any defect, at its option, either by repairing or replacing any defective parts, or by making available, at the Facility, repaired or replacement parts subject to the limit of 100% of the original equipment. **The transportation costs to and from the Facility or repair shop, shall be borne by the Seller exclusively over the first year of the warranty period, subject to the limit of twenty five percent (25%) of the original purchase price of the equipment. Seller shall be responsible for the Direct Cost of removing the apparatus from service, transportation to and from the place of repair and reinstallation of the apparatus at site (In/Out). Direct Cost excludes expenses for removing fire walls, installing temporary equipment and incremental costs of supply service. At the end of the first year of the warranty, the cost of removal and reinstallation of the defective Equipment is the responsibility of the purchaser.** The Purchaser acknowledges and agrees, that any repair or replacement of the Equipment shall not renew or extend the Warranty Period. The Purchaser further agrees that the Seller shall have no liability to the Purchaser beyond the expiration of the warranty period, and that the within warranty shall be void if the Equipment had been improperly installed or maintained, operated under abnormal conditions, or contrary to the specifications or instructions of the Seller. THE PURCHASER EXPRESSLY AGREES THAT, ASIDE FROM THE FOREGOING, THE SELLER HAS NOT GIVEN, AND IS NOT BOUND BY, ANY WARRANTY REGARDING THE EQUIPMENT, OR LIABILITY WHATSOEVER INCLUDING ANY AND ALL INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES OR LOSS OF USE OR PROFITS.
- 2.3.2 The Purchaser agrees that it shall be an absolute condition of any warranty claim that the Purchaser shall not return or dispose of any Equipment or element thereof without the Seller's express prior written authorization. **The Seller shall not bear any expense or incur any liability for repairs made outside the Facility or a repair shop designated by the Seller, without the Seller's prior written consent.**
- 2.3.3

2.4. Title, Risk and Creation of Security Interest

- 2.4.1 Title to the Equipment shall pass to the Purchaser only upon payment in full of the purchaser price therefor, including interest, if any, even though the Equipment shall become at the Purchaser's risk commencing with delivery as defined in the Incoterms. The Purchaser agrees that the loss or destruction of all or part of the Equipment shall not release the Purchaser from any obligations of payment hereunder.
- 2.4.2 The security interest granted hereby secures compliance of all obligations of the Purchaser to the Seller, present or future. Upon non-payment, when due, of any principal or interest owing to the Purchaser from the Seller (the "Indebtedness"), or where the Purchaser shall fail to perform any obligation contained herein, or in the event of the bankruptcy or insolvency of the Purchaser, or where any execution or other process of any court becomes enforceable against the Purchaser, the Seller shall also have, at its option, all of the remedies of a secured party under the Manitoba Personal Property Security Act or any successor statute thereto. The Purchaser agrees to pay to the Seller all expenses reasonably incurred by the Seller in



enforcing its rights hereunder, and agrees that the Seller may retain any or all payments already received as a rental charge for the use of the Equipment without affecting any further claims which the Seller may have against the Purchaser.

2.5. Limitation of Liability

- 2.5.1 The Purchaser agrees that the Seller not be liable for loss of expectation of profit, or any indirect special or consequential damages as a result of any failure to execute any of its obligations relating to the sale of the Equipment. The Seller's liability, on any other claim for loss arising out of the sale or repair of the Equipment or any failure of the Equipment or any element thereof shall not exceed the net unit price, exclusive of any taxes, duties or transportation cost of the Equipment or that part of the Equipment involved in such claim for loss, whichever is the lesser.

2.6. Prices and Payment Terms

- 2.6.1 Prices are valid for the period set out in clause 1.1 of this bid document. Price adjustment clauses, if provided at the time of quotation, are incorporated into this Agreement.
- 2.6.2 Unless otherwise specified in writing by the Seller, prices quoted do not include federal, provincial, state, local or any other taxes, charges, levies and duties (hereafter collectively called "the Taxes"), and if same are applicable, the Purchaser agrees to promptly pay the taxes.
- 2.6.3 Where there shall be any change in the Taxes after the date of submission of the Seller's tender or quotation and applicable to the Equipment, the Purchaser agrees that the payment to the Seller shall be adjusted to reflect such change.
- 2.6.4 The Seller has the right to adjust prices for any changes authorized by the Purchaser after acceptance of the order for the Equipment.
- 2.6.5 The Purchaser agrees to pay the Seller's price for the Equipment, plus Taxes, as set out on the Seller's invoice, directly to the Seller's Facility, upon receipt of the Seller's invoice. Where the Purchaser shall fail to make such payment within thirty (30) days of such receipt, the Purchaser covenants to pay interest on such amount not paid at the rate of one and one-half percent (1.5%) per month to accrue from the date of the invoice until payment in full is made.

2.7. Payment schedule

- The project payment terms are:
- 25% net 30 days at submission of first set of Drawings for approval.
- 35% net 30 days at time of receipt of Core Steel and Winding Conductor at our works.
- 30% net 30 days at time of successful completion of testing at our works.
- Balance 10% payment after the final acceptance, but not to exceed 30 days after delivery.



2.8. Cancellation

2.8.1 Cancellation charges as a percentage of total price to be paid to Seller, relative to project milestones.

- Ordered..... 5%
- Engineering Designs Complete 20%
- Materials Ordered 40%
- Tank Fabrication Started..... 50%
- Winding Complete..... 75%
- Vapour Phase Completed or Later 100%

2.9. Delays

2.9.1 Except in the case of Force Majeure, if Purchaser has incurred liquidated damages due to a delayed delivery solely attributable to the negligence or willful act of Seller, Purchaser shall be entitled to claim from Seller, as compensation for and in full aggregate amount shall not exceed the lesser of the following amounts:

- a) 0.5% per week to a maximum of 5% of the purchase price of the unit, the delivery of which has been delayed; and
- b) The actual liquidated damages suffered by Purchaser.
- c) No harm no foul

2.10. Taxes

2.10.1 PTI is not registered to collect taxes in the USA and Purchaser must self assess and pay any applicable federal, state, local or other applicable taxes.

2.11. Delivery Lead Time

2.6.1 Q2,2026 (units spaced 4 weeks apart), Subject to Prior Sale and confirmation at time of order.

2.12. Drawing lead time

2.8.1 Drawing package will be submitted approximately 50 -60 weeks prior to ship date, to be confirmed at time of order.

2.13. Insurance

2.13.1 Please refer to Section 7 OTHER REQUESTED PROPOSAL DOCUMENTS - Certificate of Insurance



SECTION 3: TECHNICAL DATA

Exhibit D

CONTRACT# ELE/230196

PROPOSED RATINGS AND GUARANTEED LOSSES

Manufacturer:

PTI Transformers LP

Location of Plant:

Winnipeg, Manitoba

Guaranteed losses for Autotransformer 230 KV-67KV, as described in Exhibit B - Technical Specifications included in the proposal, are as follows:

All losses are for the basic transformer at the MVA rating indicated, on "Neutral" LTC position and 230,000 volt no-load tap position, are to be stated "per transformer". Losses are to be for the basic transformer unit only and are not to include load tap-change equipment or other voltage regulating equipment.

Guaranteed No Load Loss, 105 MVA, LTC at N

51 KW guaranteed

Guaranteed Load Loss, 105 MVA, LTC at N

182 KW including LTC reactor	guaranteed
171 KW without LTC reactor	approximate

Guaranteed Load Loss, 105 MVA, LTC at 4 Raise

183.4 KW including LTC reactor calculated

Guaranteed Load Loss, 105 MVA, LTC at 5 Raise

183.7 KW including LTC reactor calculated

Approximate Power Required by Cooling
Equipment, 140 MVA (watts)

1080W

Approximate Power Required by Cooling Equipment,
175 MVA (watts)

2268W

Approximate Dimensions (inches); see Sheet 3 (Figure AA-2):

"A" and "B" are as measured from the centerline
of the H2 bushing

A	250"	B	196"	C	128"
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"E" and "F" are without radiators and with other
normally demountable equipment removed.

D	150"	E	309"	F	142"
---	------	---	------	---	------



"H" is height of tank without bushings; "M" is to top of HV bushings; "T" is to highest point above grade, either bushing or lightning arrester

	H	155"	M	291"	T	291"
High Voltage Phase Spacing (inches)	See drawing					
Low Voltage Phase Spacing (inches)	See drawing					
Approximate Weights (pounds)	365,914					
Core and Coils/ Tank and Fittings	74,184 Kg / 44,482 Kg					
Liquid	55,136 L (12,128 gallons)					
Total Weight / Shipping Weight	165,977 Kg / 100,506 Kg					
Description of Core and Coil Design:	3 leg core type, Winding layout- TV Helix -LTC Helix - CV Disc- SV Disc-DTC Helix					

Load Tap Changer (LTC): The LTC proposed to be furnished as an integral part of the Autotransformer will have the following characteristics.

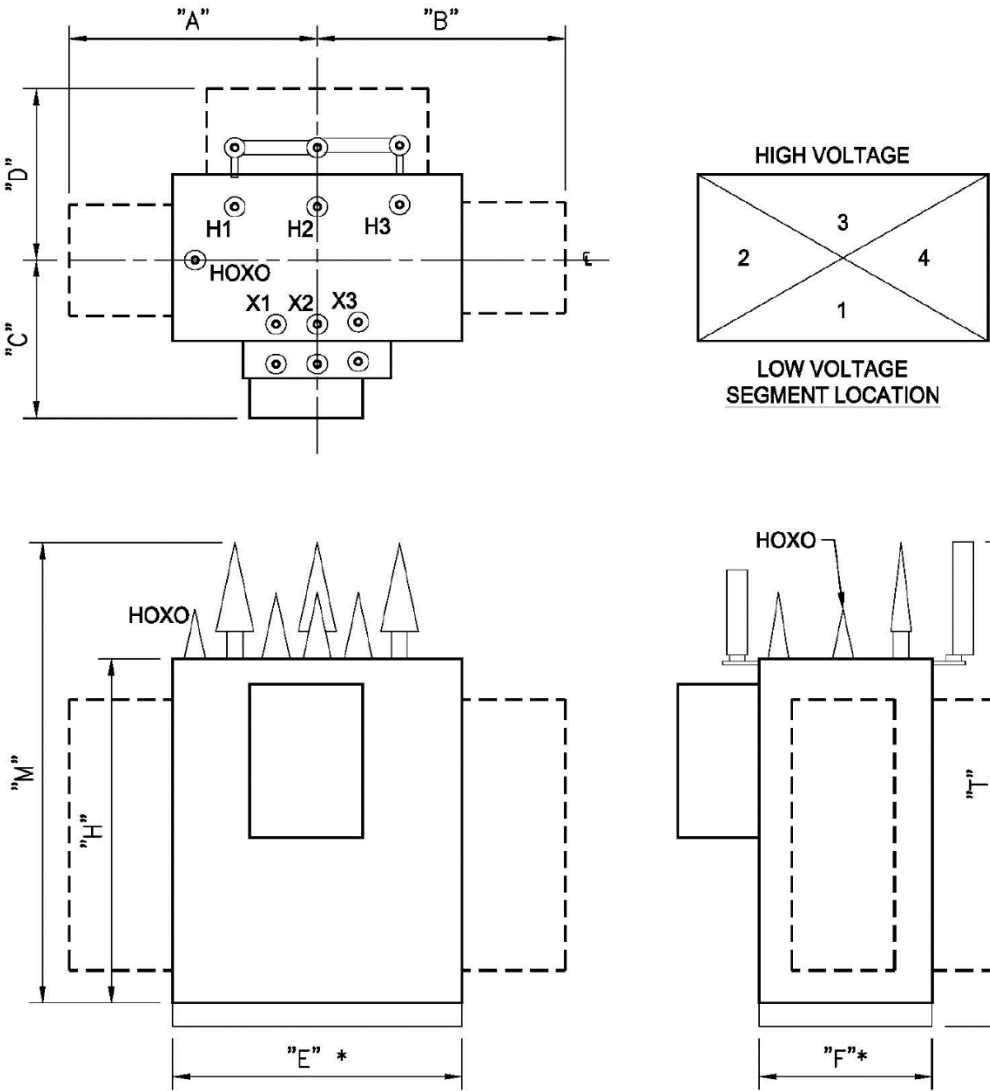
LTC Manufacturer	MR
LTC Model Identification	RMVII 2000 69kv
LTC Transition Impedance Type	Reactor Type
LTC Arc Interruption Method	Vacuum interrupters
LTC Drive Mechanism Type	MD-III
LTC Continuous Current Rating	2000 A
LTC Ratio of Series Transformer (if any)	N/A
LTC Operations before Initial Maintenance	500000
LTC Guaranteed Operations Total Life	500000



Radiator Manufacturer	Menk, USA	
Cooling System Fan (Pump) Motor Manufacturer/ Type	Krenz, USA	
Fan (Pump) Motor hp / First Stage Quantity	1/3 hp fan	10
Fan (Pump) Motor hp / Second Stage Quantity	1/3 hp fan	20
Current Transformer Manufacturer	POLY CAST	
Maximum CT Quantity in HV Space	6	
Maximum CT Quantity in LV Space	11	
Maximum CT Quantity in Tertiary Space	2	
Bushing Manufacturer	<u>High Voltage:</u> Hitachi (ABB)	<u>Low Voltage:</u> Hitachi (ABB)
Bushing Type / Designation	Oil Condenser	Oil Condenser
Permissible safe cantilever loading (lb)	IEEE	IEEE
Lightning Arrester Manufacturer	Copper or Equivalent	
High Voltage Lightning Arrester Type	Station Class	
Low Voltage Lightning Arrester Type	Station Class	

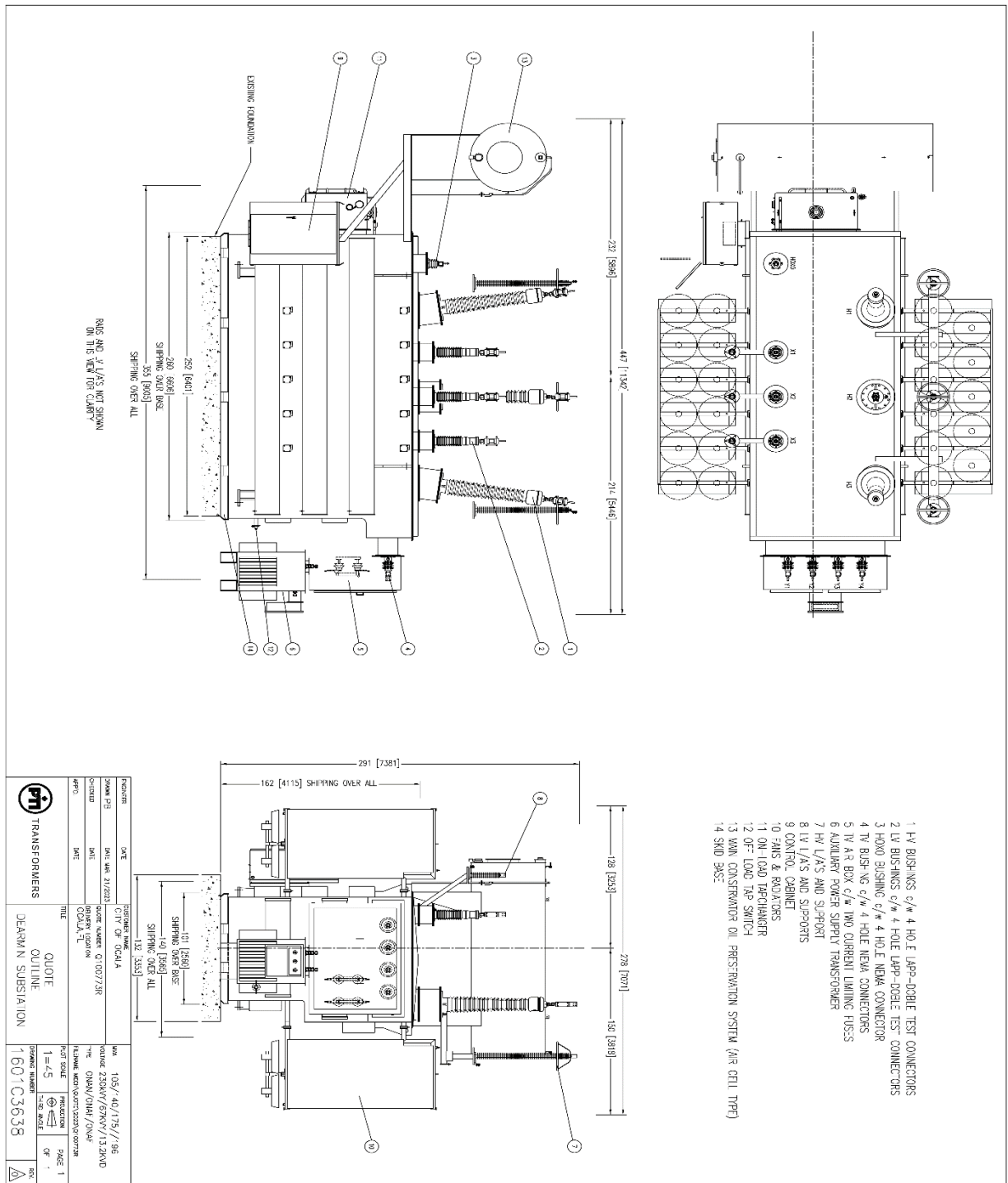


(Figure AA-2)





Outline Drawing





SECTION 4: NOTES, DEVIATIONS & CLARIFICATIONS

General Technical Comments

Technical specification:

1.06 Short circuit capability:

Refer to write up. Short circuit test is not included as test facility not available in North America. Details of calculated stress and strength will be provided during order stage.

2.04 B Winding clamping system:

We have proven, robust clamping system consisting of Hollow structural steel clamps with external tie-rods. If dynamic clamping system is desired, it can be provided at a price adder

2.06 B 4) LTC winding:

LTC winding will be multi start winding wound on separate cylinder.

With LTC on LV line end and using RMV II tap changer, we have used non linear resistors across LTC to control the transients in order to keep LTC to ground impulse level <400kV which is the limit for RMV tap changer.

Windings of preventative auto will be our proven circular multilayer type.

2.07 C Thermal:

We confirm operation at full MVA at 40C for 12 hours. The insulation life for a day will depend on load profile and ambient over 24hour period. There will be no loss of life if the average ambient in a day does not exceed 30C.

2.08A: Surge arresters:

We have considered Cooper make arresters

3.03 Auxiliary power transformer:

We strongly recommend using dry type bushings for horizontal application. We have considered Moser Glaser (Swiss) make dry type bushings for main unit TV in the enclosure for connecting to auxiliary transformer.

Details of auxiliary transformer, protection etc., to be discussed at pre order stage

Parallel operation:

The 2 units are suitable to operate in parallel with each other.

**General specification:****2.04: Oil preservation:**

Considering 230kV class unit, we have included conservator design with air-cell and breather to prevent moisture ingress in oil.

Transformer life:

As per IEEE when using thermally upgraded paper, for 65C average winding rise, 80C hotspot rise, the insulation life is 180000 hours (20.5 years). Higher life is possible depending on ambient and loading conditions.

GIC capability:

GIC is not critical for 3 leg core design, so detailed calculations are not needed. However, if detailed calculations are required, it can be performed at a price adder.

Bushing replacement:

Depending on specific design, it may not be possible to replace bushings without removing oil from the unit for safety considerations. Details can be discussed during order stage.

Tank construction:

Refer to Section 5 - Profile Sheet

Paint:

Refer to "Required Documents" file – Paint Specification

Seismic capability:

For designing for specific seismic level, we would need Seismic qualification levels, as low, moderate or high as detailed in IEEE 693. Only ground response details are not adequate to determine this. If specific qualification levels are not given, we would consider the level as low.

If specific qualification level is given (Low, Moderate or high), calculations will be done by PTI designers and approved by Professional Engineer at PTI. For bushing capability, we would check with suppliers and if any additional cost for meeting Seismic withstand, same can be discussed at the order stage.

If detailed seismic report is needed, it will be at a price adder

Connections/Joints:

Joints within the winding will be brazed. Joints between winding to leads & leads to LTC/bushing connectors will be crimped. Brazing for such leads are done only when the crimp capability is exceeded.

Tests:

Induced test with PD measurements will be performed as per IEEE/CSA standards as applicable. The test levels will be as per the standards and the preferred measurement is only pico-coulombs as they are more reliable to assess healthiness of internal insulation. Limit will be 250pC during the one-hour test

**Sound level:**

Unless otherwise specified, the guaranteed sound level is Sound pressure at No load without fans and at no load with fans. Tests will be performed for these conditions. Sound power will be calculated when specified. Sound level under load will be performed only when specified. Octave band measurements will be performed only when specified. Additional price if any will be in the quote.

External clearances:

Unless otherwise specified, external air clearances for bushings will be based on IEEE/CSA standards. For Surge arresters, the air clearance will be based on supplier recommendations.

Gasket Material:

Unless otherwise specified, the gasket material supplied will be Nitrile with a temperature range -54° to + 104° C (-65° to +220 ° F). O-Ring gaskets in machined grooves are used on circular openings, with flat gasket material inside metal gasket stops on rectangular openings.

For special requirements/or at additional cost we can supply Florosilicone gaskets with a temperature range of -57° to + 232° C (-70° to +450 ° F).

Gas Collection Configuration:

Unless otherwise specified, bushing turrets are fitted with internal gas deflectors to avoid the need for gas piping between the turrets and the GRD pipework. This also improves safety when working on the cover many pipe connections on cover are avoided.

Core/Clamp Ground:

Unless otherwise specified, the core assembly and the clamp assembly ground connection cables are each brought out through a 1.2kV/30kV BIL bushing and grounded externally with a removable cable to facilitate testing.

Neutral grounding:

For neutrals which are meant to be solidly grounded, we strongly recommend that the bushing neutrals are grounded to the station ground (not to tank). When specified, such neutrals will be brought down using copper bus supported on 5kV support insulators.

Lightning/Surge arrester grounding:

Based on supplier recommendations, Lightning arrester when practical, will be grounded to cover/top of tank to have minimum ground cable length. If arrester is on a separate structure like in mobiles, cable will be brought down to connect to station ground. For arresters with counters, the insulator size will match to supplier recommendations. The grounding cable will be of size 4/0, 600V rating.

DGA limits:

Unless otherwise specified, DGA limits will be as per C 57.130

**Conduits:**

We would provide Aluminum conduits which are light weight and corrosion resistant.

CT wires:

CT wires will be size #10. Any bigger size will involve price adder

DGA/LTC controller settings:

When the above all supplied with the transformer, these will be in the default factory settings. The units can be programmed for site specific conditions if required at a price adder. To facilitate this, device settings would need to be supplied at least 4 weeks prior to the test date.



SECTION 5: MANUFACTURING DETAILS



COMPANY PROFILE ♦ PTI TRANSFORMERS LP



PTI is a **Canadian family-owned business that is financially sound**. PTI began, in 1989, as a small maintenance and repair shop and currently employs more than 330 people.

PTI has two (2) transformer facilities one (1) of which is located in Regina, Saskatchewan and one (1) in Winnipeg, Manitoba.

The Winnipeg, Manitoba, facility, **called PTI Transformers LP**,

PRODUCT RANGE:

- ♦ Substation transformers
- ♦ GSU transformers
- ♦ Auto-transformers
- ♦ Phase shifting transformers
- ♦ Mobile substation transformer

- ♦ Primary voltage up to 525 kV
- ♦ Primary voltage up to 230 kV for mobile substations

- ♦ Up to 750 MVA top rating
- ♦ LTC & DETC

was purchased under a fixed asset deal in November 2015 from CG Power Systems Canada Inc. which included design technologies up to 525 kV and HVDC technology. The facility manufactures medium and large power transformers up to 750 MVA top rating, with primary voltage up to 525 kV and mobile substation up to 100 MVA ODAF, and primary voltage up to 230 kV.

PTI Transformers operated previously under brand-names CG Power Systems Canada, Pauwels and Federal Pioneer. The facility is known in the industry for having a very reliable **core designs** with an in-field failure rate that is **less than 0.01%**.

The 200,000 sq. ft. facility is state-of-the-art with environmentally controlled critical areas, such as the winding area and insulation area.

PTI Transformers is ISO 9001:2008 and ISO 14001:2004 certified.

The Regina facility manufactures liquid filled distribution, small and medium power transformers up to 40 MVA top rating with primary voltage up to 138 kV.

PTI, Regina, is ISO 9001:2008 certified.

PTI, Regina facility, developed a "Portable Outdoor Distribution Station", called POD's, through 145 kV, which allows our customers to significantly reduce construction and installation costs compared to building a conventional substation.





COMPANY PROFILE ♦ CORE COMPETENCY

The PTI Transformers medium and large power transformers as well as the mobile substations are designed and manufactured to meet or exceed the customer expectations while complying with the applicable industry standards.

All option and special features are incorporated into the original design per customer's specification.

LTC & DETC design is available as well as ONAN, ONAF, ODAF and ODWF cooling.

All standard accessories as per customers' specification are included.



Transformer Type	Rating*	Voltages		Phase
		HV	LV	
Substation transformers	Up to 750 MVA	Up to 525 kV	Up to 69 kV	1 or 3
Auto transformers	Up to 750 MVA	Up to 525 kV	Up to 345 kV	1 or 3
Generator Step-Up Transformers	Up to 750 MVA	Up to 525 kV	Up to 34.5 kV	1 or 3
Mobile substations	Up to 100 MVA	Up to 230 kV	Up to 115 kV	3

* Rating is top rating

PRODUCT RANGE:

- ♦ Substation transformers
- ♦ GSU transformers
- ♦ Auto-transformers
- ♦ Phase shifting transformers
- ♦ Mobile substation transformer

- ♦ Primary voltage up to 525 kV
- ♦ Primary voltage up to 230 kV for mobile substations

- ♦ Up to 750 MVA top rating
- ♦ LTC & DETC



COMPANY PROFILE ♦ LONGEVITY OF TRANSFORMERS THROUGH PD CONTROL



Utilities value assets, network reliability and safety. It is for this reason that PTI Transformer's design and manufacturing of utility grade transformers, (substation power transformers, auto-transformers and GSU transformers), are focused on having an **unmatched low partial discharge (PD) of less than 25pC, when subjected to the induced voltage test per IEEE standard C57.12.00 and C57.12.90.**

These IEEE standards prescribe a PD level of lower than 500pC. An upcoming reduction of allowable PD level to 300pC, is already being reflected in most of the utilities' specifications. This future acceptance level, i.e. 300pC, has long been adopted by PTI Transformers as its **internal manufacturing PD limit** for all power transformers manufactured.

PD is a major contributing factor in the degradation of any power transformer insulation, which ultimately leads to reduction of life expectation and ultimately to transformers failure, furthermore leading to a reduced grid reliability.

PD is an electrical discharge or spark that bridges a portion of the insulation between two conducting electrodes. It can

occur at any point in the insulation system, where the electric field strength exceeds the breakdown strength of that portion of the insulating material. PD can occur in a gaseous, liquid or solid insulating medium. It often starts within gas voids; such as voids in insulation or bubbles in transformer oil. Protracted partial discharge can erode solid insulation and eventually lead to breakdown of insulation.

Testing PD as a standard practice, by all means, provides clear evidence that the transformer is fit for installing in a way that is not likely to lead to failure and will contribute to longevity.

Once PD activity is present, even if it is intermittent, damage will **always increase over time**, unless the cause of such source is corrected. The process of deterioration can propagate and develop, until the insulation is unable to withstand the electrical stress, leading to breakdown. PD activity is a clear indication that the transformer's insulation is deteriorating in a progressive manner, which will eventually result in it being unable to withstand the electrical stress, leading to insulation breakdown which may result in a catastrophic failure and finally lead to outages.

PD can usually be prevented through careful design and material selection. In critical high voltage equipment, the integrity of the insulation is confirmed using PD detection equipment during the manufacturing stage as well as periodically through the equipment's useful life. PD prevention and detection are essential to ensure reliable, long-term operation of high voltage equipment used by electric power utilities.

PTI Transformers, with decades of designing and manufacturing high voltage power transformers, has the necessary expertise in designing PD-free transformers, detecting and measuring PD activities.



PTI Transformers measures PD on **all power transformers it manufactures**; therefore, supplying specific untapped value to our customers and contributing to the **network reliability and safety**.

Measuring PD on a regular basis is important and is key, however, PD control starts with good design criteria for PD free condition, such as the limits for averaged and point stress (i.e. Weidmann criteria), avoiding sharp electrodes for each specific voltage class and capability to analyze complex geometries using 2D and 3D electric field solvers. Hence these are stringent design criteria that must be present at the manufacturer and more specifically in the manufacturing space itself. This must be considered when purchasing the transformer and should be questioned at time of evaluation.

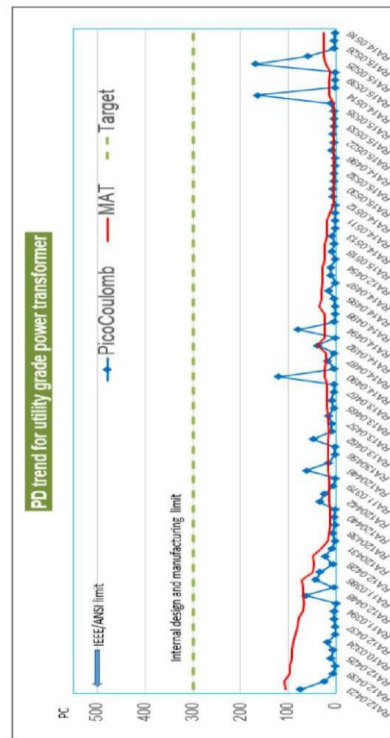
A PD-free design is not only driven by design, but also through stringent quality control of insulating materials, workmanship, cleanliness of work environment and moisture control in the manufacturing processes.

As indicated previously, power transformers are subjected to the induced voltage test per IEEE standard C57.12.00 and C57.12.90, with PD measurement prescribed.

Notwithstanding these standards and **self-imposed minimum PD levels**, the quality of our design guarantees longevity through even more stringent control of PD level on all power transformers manufactured.

Over the past recent period of one-hundred (100) transformers manufactured at PTI's Winnipeg facility, 90% tested at PD levels of less than 50pC, of which, the majority (94%) tested at 25pC or less.

The graph on the right demonstrates the results discussed in this profile sheet.





ENGINEERING INNOVATION ♦ 300 YEARS OF CUMULATIVE EXPERIENCE

PTI Transformers Engineering team has over 300 years of cumulative experience in design and development of transformers. PTI Transformers is always very active in working together with lead customers on the development of new solutions in large power transformer engineering.

The progress in this area was achieved through:

- (i) Pro-active **interpretation of customer's specification**, looking for most economical solution for the customer.
As example – the customer was looking for design of a spare GSU for a few locations with different LV voltages and same HV voltage; the original specification called for reconnectable LV winding which at 600MVA power rating would be extremely impractical; instead we proposed and developed with MR, Germany a new multi-position de-energized switch for HV side, which allowed to generate all required ranges of HV voltage with different supply voltage at LV terminals (with variable flux design) – see reference [5]
- (ii) **Common research** with a power utility, also through University of Manitoba, Winnipeg, MB and Poznan University of Technology, Poland – see e.g. [2, 3, 6, 7]
Example - Study of transformers' operational problems with moisture ingress - see [4]
- (iii) **Publication of recent achievements** in conference papers or international journals – see [1-14]
- (iv) Participation in international **standardizing organizations** (IEEE, IEC) to promote implementation of solutions and new materials, e.g. in IEEE Standard C57.54 IEEE Standard for the Design, Testing, and Application of Liquid-Immersed Distribution, Power, and Regulating Transformers Using High-Temperature Insulation Systems and Operating at Elevated Temperatures (CG was represented by a few persons in the IEEE Working Group providing required input related to thermal

performance and implementation of high temperature materials, such as aramid paper and board)

- (v) **Knowledge sharing with customers** through seminars, e.g. Weidman seminars, IEEE tutorials, customized presentations to customers
- (vi) In-depth **design reviews** with customer's consultant(s) before and after award of the contract to search for cost savings opportunities
As example – PTI developed a large phase-shifting transformer with both exiting and series units housed in one tank – this reduced the footprint of the unit in the station, simplified transport and allowed for easier operation of the unit – see ref. [8-9].
- (vii) Contribution to development of **integrated design solution** to achieve optimized design with transient, thermal and short circuit strength verification
- (viii) Expertise to design and manufacture **design solutions to special requirements of customer** like Mobile substations up to 230kV class, HVDC converter transformers, units with dual LV in zig-zag connection, GSU unit with 500kV-230kV reconnection, Universal spare GSU units with different LV voltages, Phase shifting transformers
- (ix) **Collaborative design solutions** for site operation, e.g. Reverse power flow studies

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PRODUCT RANGE:

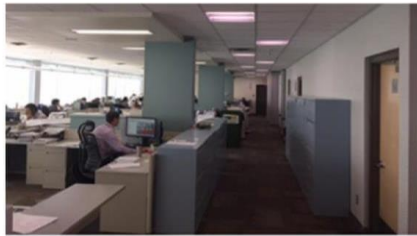
- ◊ Substation transformers
- ◊ GSU transformers
- ◊ Auto-transformers
- ◊ Phase shifting transformers
- ◊ Mobile substation transformer

- ◊ Primary voltage up to 525 kV
- ◊ Primary voltage up to 230 kV for
mobile substations

- ◊ Up to 750 MVA top rating
- ◊ LTC & DETC



COMPANY PROFILE ♦ ENGINEERING



At PTI Transformers we realize that the design of power transformers, with primary voltage through 525 kV, requires a very high level of expertise which we have in-house

Our senior engineers are members of the IEEE and are active at various IEEE transformer working groups or committees and are experts on NEMA, IEEE/ANSI, CSA and IEC standards.

Our transformers are designed to the specifications and applications as per our customers' request.

Through special in-house developed software, we optimize every transformer in relation to labor and current material cost and loss evaluation together with eventual noise level restrictions imposed. We evaluate transformer behavior during short-circuit conditions, as well as the analysis of specific areas where high electrical stresses can occur during normal transformer operation. Part of our design verification is hinged on the calculation of distribution of voltage stresses during lightning impulse and switching surge conditions.

Should seismic calculation and withstand be required we can provide static or dynamic design evaluation to ensure the transformer will withstand the specified customer requirement.

The PTI Transformers LP engineering staff, entails a group of twenty-six (26) full-time engineers having a total of 336 years of experience.

Our engineer staff, members of the IEEE and CIGRE organization, are using robust and proven designs philosophies which in turn translates in an ultra-low in-filed failure rate of less than 0.01%. We are using 3D fabrication drawings to further reduce the first pass yield to industry standards.

Department	# of people	Avg. seniority	Total seniority
Mechanical engineering	14	13.33	186.62
Electrical engineering	10	6.29	62.90
Engineering management	2	43.50	87.00
Total years	26		336.52

Our senior engineers are well respected in the North American transformer market, below their biography:

Dr. Waldemar Ziomek – Engineering R & D Manager

Waldemar started in 1997 with Pauwels Canada Inc. as a design engineer and became in 1999 their Engineering Manager through 2014. Today, due to his vast experience he is the **Engineering R&D Manager at PTI Transformers**. He as a PhD, in EE, from the Poznan University of Technology specialized in Electric Power and High Voltage Engineering, as well as a MSC degree in Electric Machines and Apparatus.

As Manager of Engineering he designed the insulating structures as well as supervised designs and the manufacturing of 500+ power transformers between 1999 and 2014; entailing substation transformers, generator step-up transformers, auto-transformers, phase shifting transformers, and HVDC transformers. Although, PTI Transformers LP is not manufacturing transformers with a primary voltage up to 765 kV, he was part of the 765 kV development team.

He published over sixty (60) papers for various organization or institutions such as CIGRE and IEEE, this concerning



transformer insulation, vacuum insulation systems, gaseous dielectrics and discharge recognition methods.

He is a current member of the IEEE Power Engineering Society, Transformer Committee, IEEE standards association, CSA and CIGRE.

Currently he is also Adjunct Professor at the University of Manitoba.

Universal spare GSU transformers, Mobile substation, Smart transformers and Geomagnetic induced currents in transformers.

In short, Vijayan has over thirty-eight (38) years of large power, transformer, EHV shunt reactor, phase shifting and mobile transformer experience.

Krishnamurthy Vijayan – Engineering Manager

From 1981 through 1989, Vijayan was the Senior Electrical Design Engineer at Crompton Greaves Ltd., India. From 1998 through 2001, he was the Engineering Design Manager at Crompton Greaves Ltd., India. He immigrated to Canada in 2001 as Senior Electrical Design Engineer for Pauwels Canada Inc./CG Power Systems Canada Inc. Vijayan was promoted to Head of Electrical Engineering with CG Power Systems Canada Inc. and promoted as Engineering Manager in 2014.

He has a Master of Engineering with specialization of High Voltage Engineering from the reputed University, Indian Institute of Science in India.

Although, PTI Transformers LP is not manufacturing transformers with a primary voltage up to 765 kV, Vijayan was part of the CG Power Systems, Hungary, 765 kV development team. He was also part of the development team for 1200kV auto-transformer by the CG group.

He was directly involved in the electrical design of 420 kV shunt reactors, 750 MVA top rating 3 ϕ auto-transformers, 200 MVA 1 ϕ generator step-up transformer, 650 MVA 3 ϕ generator step-up transformer, 200 MVA 3 ϕ phase shifting transformer as well as a 600 MVA 3 ϕ universal generator step-up transformer and not to forget the development of a 3 ϕ 230 kV mobile substation transformer.

He published over twelve (12) technical papers for various organization or institutions such as CIGRE and IEEE, this concerning Shunt reactors, Phase shifting transformers,

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- ◊ Primary voltage up to 230 kV for mobile substations

- ◊ Up to 750 MVA top rating
- ◊ LTC & DETC



COMPANY PROFILE ♦ QUALITY MANAGEMENT SYSTEM



PTI Transformers LP is ISO 9001:2008 certified for "power transformers up to 1,000 MVA, with a primary voltage class up to 765 kV and mobile transformers".

Our quality philosophy is:

- To provide best in-class power systems of exceptional quality and productivity
- To be a customer-focused organization through the translating customer requirements into world class power systems
- To foster a creative work environment that promotes employee innovation, development, and engagement
- To continue improve our operations, systems and productivities
- To develop and sustain an exceptional supply chain network that delivers quality products and services every time, through a mutual beneficial customer supplier relationship

On a periodically basis, as prescribed by the quality manual, reviews at the level of management are made to evaluate key performance factors related to the quality policy and quality

objectives, which are shared through the organization in words and in action. This review process is described in detail in the controlled quality manual and this for all level of the organization; hence we are truly a made-to-order organization. Not only do we focus on in-house control PTI Transformers, through internal audits, customer satisfaction is of paramount importance and is the primary responsibility of each employee; hence on regular basis customer surveys are conducted to analyze the effectiveness of our quality management systems.

Each of all quality management processes are monitored and measured by the respective process owners through their selected Key Performance Indicators (KPI's). Process owners must select KPI's that allow them to monitor their process or department's performance, and to be able to react where corrections or improvement are required to adhere to the quality objectives set. Measurement of success and failure is contribution to PTI Transformers LP success as a first-class large power transformer supplier.

The success of PTI Transformer's quality process control is hinged on the following corner-stone procedure; and these are:

- **Control of documents procedure** – to establish and maintain a process for review, approval, distribution and control of all essential documents related to ISO 9001 Quality Management Systems (QMS) and ISO 14000 Environmental Management System (EMS).
- **Sales procedure** – to establish and maintain a process for all request for quotations within the organizations and provide guidance of execution through flow chart control.
- **Design procedure** – to establish and maintain a process for all quotation design with the design tools in place through flow chart control.
- **Manufacturing procedure** – establishes a well-documented manufacturing procedures and work instructions for all of our fabrication and manufacturing processes, including collection of relevant manufacturing data.
- **Contract administration procedure** – to establish and maintain the contract administration function within the organization and to provide guidance through flow-chart control.
- **Scheduling procedure** – to establish and maintain a process for scheduling through the organization and at all levels of the organization and to provide guidance through flow-chart control.



- **Design-to-order procedure** – to establish and maintain a design process for transformers orders within the engineering department and to provide guidance through flow-chart control.
- **Manufacturing procedure** –
- **Inspection and testing procedure** – to establish and maintain a process for inspection and testing process for all products manufactured at PTI Transformers LP
- **Getting ready for transportation** – to establish and maintain a process for testing the product and all associated parts and preparing it for shipment to defined location as specified in the customer's contract.
- **Shipping and invoicing** – to establish and maintain a process for shipping and invoicing for the product manufactured by PTI Transformers LP.

PTI Transformer's objective is well defined in our QMS and are solely related to ensure that the **manufactured products perform safely and reliably, meeting the requirements specified by its customers and providing excellent life cycle value; while considering that for the most part people are driving the quality of organization and products supplied.**

Therefore, we measure success and failure within the PTI Transformers organization as defined in the QMS manual, these are:

- **Continual improvement** – to establish and maintain continual improvement processes throughout the organization
- **Preventative action** – to establish and maintain a process to induce preventive action processes throughout the organization to identify and eliminate the causes of potential nonconformities to prevent their occurrences
- **Control of non-conformances** – to establish and maintain as process for identification, segregation and disposition of non-conformances of the product manufactured to further prevent its unintended use of delivery

The continual improvement processes include the monthly measurement of:

- First pass yield
- In-field failures
- Cost of poor quality (COPQ) as a percentage of net sales
- Efficiency in production as a measure of throughput time
- EHS
- Quality of supply
- Inventory control

The PTI Transformers QMS and EHS program is geared towards safe operation of the product manufactured as customers are depending on high quality products to contribute greatly to the

stability of their grid system in various shapes and forms. Indeed, the PTI Transformers power transformers are in fact an investment in our technology that needs to be secured for decades. Our customer's investment is secured through our processes implemented therefore inducing consistent quality of the product and its vital parts.

PTI Transformers LP does not compromise on quality; this through systems put in place and rigorous acceptance testing which ultimately has resulted in an "in-field failure rate of less than 0.01%".

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- ◊ Phase shifting transformers
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- ◊ Primary voltage up to 230 kV for mobile substations

- ◊ Up to 750 MVA top rating
- ◊ LTC & DETC



COMPANY PROFILE ♦ WINDINGS



Windings are of the circular concentric type, because this shape results in the highest short-circuit strength and provides excellent cooling performance with natural or forced oil flow. The copper conductors are paper covered magnet wire (single, twin, or triple), or continuously transposed cable and designed to optimize eddy loss and withstand anticipated short circuit forces. Low-voltage windings are made with netting tape/perforated Nomex® insulation for better thermal performance. The inner windings are designed to withstand inward radial forces based on ability of conductor to resist forces in a "free-buckling" mode. All the CTC conductors are epoxy bonded for high mechanical strength. High voltage windings are designed with special shielded windings without any joints for better impulse strength. Custom designed static rings are normally used to control the electric field at the ends of windings.

Insulation materials are made from pre-compressed boards of high mechanical and electrical strength. Insulating material is cut to size. End blocks and supporting structures are fabricated in the plant insulation shop or by PTI Transformers LP approved insulation manufacturers. All angle rings and caps are made of molded pressboard, with contoured profiles, in order to increase the dielectric withstand.

Directed oil flow is typically used to provide enhanced cooling and to limit hot spot temperatures. The oil flow washers/seals direct the oil flow in a zigzag pattern through the windings to

provide effective cooling. For the units with forced cooling the oil from pumps is directed into the windings (ODAF) where oil enters through the oil holes in the bottom insulation; it is distributed through the oil reservoir into all windings, continues throughout the winding in zigzag pattern and leaves the coil assembly at the top. This system is superior to the OFAF method in which the oil is pumped into the tank, cooling only the bulk volume of oil and not the oil in the windings.

After the individual coils are wound, they are initially sized, dried in the auto clave vacuum oven, and then sized again with a clamping pressure of 600psi (4 N/mm²). Critical windings are sized under spring pressure. After drying, they are sized to the required axial height to ensure short circuit performance. The coils are combined together into the coil assembly and then completed with end insulation. The coil assembly is next compressed to ensure correct positions of all windings within the coil assembly. The Winding area has been completely refurbished to isolate the department and provide a dust free environment. Positive air pressure is maintained by filtered air make-up units to ensure that positive air flow is provided in the shop. This air flow minimizes the intake of non-filtered air through open doors etc. and ensures that air-borne contaminants are kept to a reduced to a level that will ensure a clean production environment.

PRODUCT RANGE:

- ♦ Substation transformers
- ♦ GSU transformers
- ♦ Auto-transformers
- ♦ Phase shifting transformers
- ♦ Mobile substation transformer

- ♦ Primary voltage up to 525 kV
- ♦ Primary voltage up to 230 kV for mobile substations

- ♦ Up to 750 MVA top rating
- ♦ LTC & DETC



COMPANY PROFILE ♦ CORE & COILS ASSEMBLY



Prefabricated coil to clamp insulation is fitted on the bottom clamps prior to placing the coil assemblies concentrically on the core legs. The major insulation is usually of rigid form. It is prefabricated in a specially designated insulation area, isolated from other departments to provide carefully controlled clean and dry manufacturing and storage environment.

After the coils are lowered into place, the top pre-fabricated coil to clamp insulation is placed in position and the top yoke of core steel and box clamp are added. The coils are clamped axially by tie rods, or tie-plates, made of high tensile strength steel, as required by design. The core clamps and tie rods (or tie-plates) are designed so that the coils cannot shift during shipment and can withstand the maximum forces that may develop under short circuit conditions.

All leads and bus-bars are rigidly supported to withstand shipping and short circuit forces. Supports are made of high density pressboard with specially developed fiber-glass reinforced epoxy hardware.

All steel projections are located in areas of low electrical stress and, where necessary, high voltage leads are insulated using contoured insulation or shielded by metal tubes to minimize the local electrical stresses. The core & coils assembly is

thoroughly inspected before it goes into the vapor phase process.

During the manufacture of HVDC units, a clean room is utilized to minimize the opportunity for active part contamination. The structure is erected in the assembly area and positive air flow provided through portable air filters. Employees are required to dress in lint free coveralls and entrance to the area is controlled and limited only to employees involved in the project and fully compliant with clean room procedures.

PTI Transformers LP core and coils are of robust quality and design, which ultimately has resulted in an "in-field failure rate of less than 0.01%".

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COMPANY PROFILE ♦ VAPOR-PHASE PROCESSING



Increasing quality requirements demand a more and more careful treatment under vacuum. After the initially applied technologies such as the hot-air circulation process, the vapor-phase drying process nowadays is the most efficient method to treat power transformers. At PTI Transformers LP we use a Hedrich system, 400 kW, cascade evaporator.

The completed core and coil assembly is thoroughly dried by the vapor-phase drying process to achieve the predetermined parameters, such dew point and water content in cellulose insulation (less than 0.3% moisture content in insulation).

The core and coil assembly is heated to 50°C, by injecting kerosene vapor into the autoclave; afterwards the autoclave internal pressure is lowered to 35mbar for 2 hours. Then kerosene vapor is injected again and the core and coil assembly is now raised to a temperature 85°C with a vacuum to 30mbar and this for 2 hours. A new kerosene vapor cycle is introduced now with the core and coil assembly reaching a temperature of 110°C with vacuum to 30mbar for 2 hours. At the final heating cycle the core and coil assembly is raised to 120°C and the autoclave internal pressure is then lowered to 25mbar for 1 hour. The chamber is then placed under fine vacuum; minimum end criteria for vacuum is 0.15mbar or less for a minimum of 3 hours with all other process parameters met.

The core and coil assembly must be at a minimum temperature of 115°C at the end of the fine vacuum cycle and water extraction rate must be 14 g/hr/tonne. Only then these parameters together give an insulation moisture level of 0.3% or less as required.

The vapor phase is a fully automated machine with 24 hours fully automated monitoring and logging.

As the environment in the autoclave is essentially oxygen free, temperature reaching 120°C can be utilized without damage to the insulation or loss of life.

After the core and coil assembly is removed from the autoclave, the assembly is completely retightened, while hot, to take up all shrinkage, then cleaned, inspected, and promptly tanked within the times set by design.

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COMPANY PROFILE ♦ TANK MANUFACTURE



joint design is a tee-joint with a double fillet weld (one fillet on each side of the plate). As only CWB or AWS certified fabrication shops are employed, all welds are performed to qualified procedures by qualified welders.

The tee-joint corner design of the tanks allows for a flexible joint and increases the rupture resistance of the tank due to possible internal fault. This tank corner welding procedure has been our standard since the early 1970's and no field issues were reported with respect to tanks leaking at the corner joints.

Transformer tanks are constructed of mild-steel and designed to withstand normal operating conditions, application full vacuum, lifting, jacking, and skidding.

The completed tank and accessories are abrasive blasted to remove all mill scale and contaminants, and coated with a robust plural component coating system that exceeds IEEE recommended performance standards.

Adequate facilities are provided on the tank for lifting, jacking and pulling, as per CSA, IEEE/ANSI or even IEC. Openings in the cover are formed by raised flanges designed so that the fasteners do not extend through the cover. Hand-holes and/or manholes are provided for easy access to the active assembly within the tank, access to internal bushing connections etc. Tank bases are made from structural shapes or thickened base plates.

PTI Transformers is Canadian Welding Bureau certified for welding design, practices and procedures. Only CWB or AWS certified fabrication shops are employed for metal fabrication. Only AWS or CWB prequalified joints are utilized. The tank corner

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COMPANY PROFILE ♦ TESTING



Prior to shipment, all transformers manufactured by PTI Transformers LP are tested in accordance with the latest applicable IEEE/ANSI and CSA standards and customer specifications.

All industry standard and optional tests with the exception of short-circuit tests, are performed in-house at PTI Transformers LP. We have well trained personnel and utilize accurate, certified and modern test equipment.

The results of all tests are provided in a certified test report.

PTI Transformers LP performs the tests as listed in IEEE/ANSI C57.12.90 and CAN/CSA-C88-M90.

The PTI Transformers LP are tested as follows:

Performance tests:

- Ratio test
- No load loss and % excitation current before and after dielectric tests
- Load loss and % impedance
- Zero sequence impedance

Dielectric tests:

- Lightning impulse test include full wave and chopped wave impulse.
- Switching impulse
- Applied voltage test
- Induced overvoltage with partial discharge measurement (3 phase or 1 Phase)

Thermal test:

- Winding resistance
- Heat run test
- Over load heat run
- Dissolved gas analysis (DGA)
- Thermal scan on transformer tank.

Other tests:

- Insulation capacitance and power factor test on windings and bushings.
- 10 kV excitation current
- Sound level test
- Megger - Insulation resistance (IR) and polarization index (PI) of winding.
- Megger for core, clamp and ground.
- Recurrent surge test – only done on new, critical or if specified by customer.
- CT test – ratio, excitation, polarity, resistance and knee point voltage.
- On load tap changer test for rated voltage and current.
- Magnetic balance test
- Vector group and polarity.
- The control test on auxiliary equipment.

In process test:

These tests are done during the manufacturing process on core and coil assembly of transformer.

- Core insulation tests.
- Pre-lead assembly ratio test.
- Winding resistance (optional).

Prior to shipment, and upon customer's request, PTI Transformers LP can do a frequency response analysis (often referred to as FRA or SFRA) which is a powerful and sensitive method for



testing the mechanical integrity of transformer cores, windings, and press frames, in power transformers.

SFRA creates a so-called "fingerprint" of the power transformer. Comparing the measurements taken at various phases or on multiple identical transformers, as well as comparing measurements with the former fingerprint of the same transformer, provide indications of any mechanical or electrical changes after the transformer has been delivered to site.

PTI Transformers recommend testing the frequency response particularly after transporting transformers and after faults at high currents have occurred and compare these with one done prior shipment.



PTI Transformers is equipped with a state-of-the-art digital impulse recording system. The Haefely-Trench impulse system (HAIS) with 16 stages impulse voltage generator of capacity 3200kV and 320 kJ, provides the most accurate analysis of impulse results available today. The electronic recording of the impulse current and voltage waveforms allows quick mathematical comparisons to be made, including the difference between the two waveforms under scrutiny. Accurate printed and plotted final results are quickly available.

For chopped wave tests, a five-stage, 15 gaps, 3000 kV multiple chopping gap is used. The PTI Transformers test bay is capable of performing lightning impulse with chopping and switching impulse tests as per customer requirement and international standards.

For induced testing, a variable voltage alternator, rated 8.66kV, 100 Amps, 3/1-phase, 50 to 240 Hz, is used and solid state speed control of the 1000 HP, DC driving motor with DC voltage 527-700 volts. In the induced potential test, partial discharge (pC) and RIV (μ V) measurements are done with omicron MPD 600 High-end partial discharge measurement system with 6 channel output, it is the best partial discharge measurement and analysis equipment available across the industry.

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COMPANY PROFILE ♦ PACKING, SHIPPING & LOGISTICS



Medium and large power transformers by their size and weight are challenging to ship. The plant is ideally located to take advantage of both highway and rail links to major transportation arteries in North America. This allows PTI Transformers to ship transformers units to the four corners of the continent. PTI Transformers has significant experience in the transportation of large power transformers which reduces the risk of transportation damage for our customer.

We are able to coordinate all of our customer's logistics requirements from a single point of contact (SPOC). PTI Transformer's shipping department can make arrangements for customer's units to be shipped by rail, track, ship or any combination. We will also coordinate the offloading of the unit at the site or storage area and moving the unit to its final location.

We use reputable specialty carries for our trucking requirements and utilize local logistics agencies to establish permits for long haul truck shipments from the plant. Our facility has a railway spur which enters the main building on the east side and allows our staff to load a transformer directly onto the railcar inside the factory.

Our shipping department transports all of the parts and spare

parts for the unit to the site or a location of the customer's choosing. These parts are coordinated to meet the transformer at the site to ensure the economic off-loading of parts and the transformer at the same time.

We use the latest digital sensors and GPS technology to monitor the shipping process while the transformer is on the move. Each transformer can be equipped with digital impact monitor and/or GOS tracing system. This allows PTI Transformers LP to assess whether there were any anomalies during the shipping of the unit and whether there were any impacts that could affect the quality of the product. The GPS tracking system allows us to track the process of the unit in real time and if there are any anomalies in the impact recorder, they can be coordinated with the GPS information after the fact to determine where and when the anomaly took place.

All of the activities related to packing and shipping are controlled by written/illustrated procedures to ensure consistency and conformance to requirements. These procedures are available at the plant for audit at a time convenient to our customers.

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COMPANY PROFILE ♦ AFTER SALES SERVICE



PTI Transformer LP's professional service group is ready and capable to fulfill all the after sales service requirements you may have.

Our transformer service group consist of five (5) experienced technicians; fully qualified and safety certified to dress-out large power transformers with primary voltages up to 525 kV.

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PTI Transformer's service team carry-out on-site inspections, diagnostics and maintenance activities in addition to on-site refurbishments and repair work.

We have the expertise to perform all required activities on power transformers and load tap changers as follows:

- **Installations and relocations**
 - New transformer installs and testing
 - Existing transformer relocation
 - Commissioning and start-up
- **Repairs and refurbishment**
 - Radiator/Cooler replacements
 - Gasket replacement & leak repair
 - Cleaning and painting
 - LTC and DETC refurbishment
 - HV & LV bushing refurbishment
 - Control box refurbishment
- **Transformer enhancement and improvement**
 - Cooling upgrades
 - Breather upgrades
 - Controls upgrade
 - LTC & DETC upgrades
 - Gauges & probes upgrade
 - Pressure relief device conversions and ducting

In addition to providing the above mentioned services, PTI Transformers also provides OEM spare parts such as buchholz relay, radiators, WTI/OTI, fans, pumps, bushings, gauges or any other related LTC transformer accessory.

We provide on-site transformer consulting, including surveys, commissioning, internal & external transformer inspections, oil testing and training where required.





SECTION 6: ISO CERTIFICATIONS



Certificate of Registration

This certifies that the Quality Management System of

PTI Transformers LP

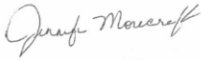
101 Rockman Street
Winnipeg, Manitoba, R3T 0L7, Canada

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

ISO 9001:2015

Scope of Registration:
Design, manufacture, delivery and servicing of medium and large power transformers.

Certificate Number:	6G721-ISO
Certificate Issue Date:	22-APR-2021
Registration Date:	09-MAY-2021
Expiration Date *:	08-MAY-2024


Jennifer Morecraft,
 Senior Managing Director




NSF International Strategic Registrations

789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | www.nsf-isr.org

Authorized Registration and/or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.
 *Company is audited for conformance at regular intervals. To verify registrations call (888) NSF-9000 or visit our web site at www.nsf-isr.org



Certificate of Registration

This certifies that the Environmental Management System of

PTI Transformers LP

101 Rockman Street
Winnipeg, Manitoba, R3T 0L7, Canada

has been assessed by NSF-ISR and found to be in conformance to the following standard(s):

ISO 14001:2015

Scope of Registration:

Design, manufacture, delivery and servicing of medium and large power transformers.



Certificate Number:	6G721-EM7
Certificate Issue Date:	22-APR-2021
Registration Date:	09-MAY-2021
Expiration Date *:	08-MAY-2024

Jennifer Morecraft,
Senior Managing Director

NSF International Strategic Registrations

789 North Dixboro Road, Ann Arbor, Michigan 48105 | (888) NSF-9000 | www.nsf-isr.org

Authorized Registration and /or Accreditation Marks. This certificate is property of NSF-ISR and must be returned upon request.
*Company is audited for conformance at regular intervals. To verify registrations call (888) NSF-9000 or visit our web site at www.nsf-isr.org



SECTION 7: OTHER REQUESTED PROPOSAL DOCUMENTS

- Certificate of Insurance
- Reference List
- US Business References
- Paint Specification
- Short circuit capability
- PTI Approved List of Vendors
- Storage Policy
- Corp Origination Chart
- Quality Plan
- Quality & Environmental Management System MANUAL
- Safety & Healthy Policy
- Inspection and Test Plan

**AON**

Aon Reed Stenhouse Inc.
2103 - 11th Avenue, 8th Floor
Regina, Saskatchewan
S4P 3Z8

Certificate of Insurance**To: TO WHOM IT MAY CONCERN****Re: Evidence of Insurance**

Insurance as described herein has been arranged on behalf of the insured named herein under the following policy(ies) and as more fully described by the terms, conditions, exclusions and provisions contained in the said policy(ies) and any endorsements attached thereto.

Insured: PTI Transformers LP
101 Rockman Street
Winnipeg, MB R3T 0L7

Coverage:	Insurer(s)	Policy No.	Policy Eff. Date	Policy Exp. Date	Limit(s) of Liability
Commercial General Liability	Liberty Mutual Insurance Company	1000544840-01	July 15, 2022	May 15, 2023	\$2,000,000 each Occurrence - Bodily Injury and Property Damage, subject to aggregate where applicable Non-Owned Automobile Liability
Umbrella Liability	Everest Insurance Company of Canada	E4MF008079	July 15, 2022	May 15, 2023	\$3,000,000 each Occurrence in excess of underlying policies above on a follow form basis.
Cargo	CNA	MP 4411	May 15, 2022	May 15, 2023	\$5,000,000 by any one inland conveyance \$50,000 Deductible any one loss
Manufacturer's E&O	Certain Underwriters at Lloyds as authorized by Strategic Underwriting Managers Inc.	To be advised	July 15, 2022	May 15, 2023	\$5,000,000 each Claim \$5,000,000 Aggregate \$ 50,000 Retention
Contractor's Pollution Liability	Liberty Mutual Insurance Company	UB1TO1ACIX5H122 \$	May 11, 2022	May 15, 2023	\$5,000,000 Each Occurrence \$3,000,000 Aggregate

THIS IS A SUMMARY OF COVERAGES ONLY; ACTUAL POLICY WORDING, CONDITIONS AND LIMITATIONS APPLY

This Certificate constitutes a statement of the facts as of the date of issuance and are so represented and warranted only to the Certificate Holder; other persons relying on this Certificate do so at their own risk.

Aon Reed Stenhouse Inc.

Terrilee Lamer, CAIB
(306) 569-6726

Dated July 20, 2022, at Regina, Saskatchewan

**THE POLICY CONTAINS A CLAUSE THAT MAY LIMIT THE AMOUNT PAYABLE
OR, IN THE CASE OF AUTOMOBILE INSURANCE,
THE POLICY CONTAINS A PARTIAL PAYMENT OF LOSS CLAUSE**

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PTI Customer Contacts

Name	Company	Phone	Email
Steve W. Quade	Blattner Energy	320-356-2342	SteveQ@blattnerenergy.com
Matt Karels	Otter Tail Power Company	-	mkarels@optco.com
Doug Filer	US Army Corps of Engineers	503-808-4229	Doug.D.Filer@usace.army.mil
Michelle Antantis	Duquesne Light and Power	412-393-8589	Mantantis@duqlight.com
Ken Morgan	Morgan Consulting	360-457-1729	kenm@olypen.com

PTI TRANSFORMERS LP	PAINT SPECIFICATION FOR METAL PARTS	
Quality Management System ENGINEERING SPECIFICATION	Document Number: ES-70-002	

1. **Scope:**

This specification outlines the paint requirement for metal parts, it shall be suitable for spray application.

2. **General:**

All paints shall be ready-mixed at the factory to comply with the specification formula for the type of paint ordered shall be free from dirt, water and other foreign matter; and shall dry within the specified period to a good film without running, streaking or sagging.

Two specific requirements for painting metal parts:

Internal metal parts – consist of metal parts and surfaces in contact with transformer oil such as clamp structure, base bar, end bracket assembly, top cross brace, locating beam, and inside surface of the tank, cover, conservator, turret, LTC box, cooler pipe, header, hand-hole cover.

External metal parts – consist of metal parts and surfaces not in contact with transformer oil such as lightning arrestor (L/A) support assembly, A-Frame assembly, conservator support assembly, control box and outside surface of the tank, cover, conservator, turret, LTC box, cooler pipe, header, hand hole cover.

3. **Specific Instruction:**

3.1. Surface Preparation

- ☐ 1.1. Surfaces shall be free of all visible oil, grease, dirt, mill scale, rust, coating, oxides, corrosion, and other foreign matter.
- ☐ 1.2. All sharp edges must be broken with appropriate grinding tool, 3 passes with 100 grit.
- ☐ 1.1. Commercial blast to SSPC-SP 6
- ☐ 1.1. Blast profile of 2 mil +/- 0.5 mil
- ☐ 1.1. A maximum of 24 hours exposure time is allowed before painting application.
- ☐ 1.1. Use Loctite two part epoxy to seal welded clamping plates from egress of trapped Shot-blast material.

3.2. Masking surfaces before painting

- ☐ 2.1. For internal metal parts such as clamp, base bar, top cross brace, end brackets, and locating beam, the surfaces to be masked with tape will be specified by standard drawings.
- ☐ 2.2. For the tank and cover, the surfaces to be masked with tape will be specified by standard drawings.
- ☐ 2.1. For the conservator, the surfaces to be masked with tape will be specified by standard drawings.

3.3. Spot/Stripe Priming

- ☐ 1.1. Apply a stripe primer coat first on welds, edges, and hard to reach surface areas before full prime coat application. Spray or brush application are acceptable.

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PTI TRANSFORMERS LP	PAINT SPECIFICATION FOR METAL PARTS	
Quality Management System ENGINEERING SPECIFICATION	Document Number: ES-70-002	

3.4. Internal Metal Parts Paint Requirements

- ☐1. White epoxy primer/Top coat - Superior-Sequoia 263-166 A&B
- ☐2. Dry film thickness (DFT) is 3.0mils-5.0 mils for 1,500 hrs

3.5. External Metal Parts Paint Requirements

- ☐1. First full prime coat – High solids red oxide epoxy primer; Superior Sequoia 263-147 A&B, DFT at least 4.0 mils for 1,500 hrs.
- ☐2. Top coat – Urethane Topcoat 4:1; Superior Sequoia 273-719, DFT at least 2.0 mils above profile.
- ☐ Color for top coat - as required by specific order.

☐ **Approval List:**

Responsibility Center: Engineering	Prepared by: R. Jorundson <i>Original signed</i>	Date:	Issued by ISO Coord: John Manansala <i>Original signed</i>	Date:
Accepted for Quality: Arlyne Jutiz <i>Original signed</i>	Date:	Accepted for Engineering: Jim Nielsen <i>Original signed</i>	Date:	<i>Intentionally left blank</i>

☐ **Revision History:**

Revision no	Revised by	Date	Description of Revision
0	A. Minh Vuong	August 26, 2013	New work instruction
1	Armand Siapno	July 29, 2013	Added item 3.1.6 under surface preparation
2	ST	January 2016	New company name, logo
3	B.Seerapathy	March 21, 2018	Minor Format Updation. Logo changed from Pauwels to PTI
4	R. Jorundson	June 18, 2018	Update 2.2.4 & 2.2.5 to current product in use.
5	Arlyne Jutiz	February 1, 2019	Modify "Approval List" section Change company name and logo

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SHORT CIRCUIT CAPABILITY

Short circuit test is a very special test which is performed to demonstrate the ability of the transformer to withstand stresses due to short circuit during operation. For high voltage transformers this test can be performed only at few special high-power laboratories in the world. At PTI short circuit design capability is verified using special field program. The calculations verify free/forced buckling, radial bending, axial bending, axial stress on key spacer & tilting for inner windings and hoop stress, tilting, axial bending, axial stress on key spacer for the outer winding. CTC conductors are epoxy bonded to enhance mechanical strength. Inner windings are designed for free buckling condition. PTI group has successfully verified the design capability by performing short circuit tests on units up to 315MVA 3 phase and 200MVA single phase units. The list below indicates details of the units successfully tested for short circuit.

Re: SHORT-CIRCUIT TESTING OF POWER TRANSFORMERS

PTI Transformers LP's has manufactured power transformers since 1947.

The Winnipeg transformer manufacturing plant (formerly CG Power Systems Canada Inc.), acquired by PTI Transformers LP in 2015, has been in operation for over 70 years. During this time period, several thousand power transformers were built and installed. Within the entire history of manufacturing power transformers in Winnipeg, there have not been any reported short-circuit failures of units in operation.

A few years after the 1994 Pauwels acquisition of the Winnipeg plant, all Pauwels facilities went through an Alignment Process, resulting in a commonality of design, manufacturing techniques and technology. In particular, the short-circuit calculations and methods for supporting the active part were thoroughly analyzed. All transformers are subjected to like conditions during short-circuit events, whether in testing or in operation. Most manufacturers of large power transformers with experience in the short-circuit testing of units have very similar design techniques to calculate short-circuit forces and stresses, as well as similar production methods and materials. Through the years and after numerous design reviews with customers and their consultants, certain elements of transformer technology become a standard for the industry.

From the early 1970's the Winnipeg manufacturing plant has used practically the same short-circuit calculations. The same set of critical parameters are also used to evaluate the "withstand" of conductors, pressboard spacers and clamping structures.

As stated before, all PTI transformers are designed using exactly the same rules. All PTI transformer units are built using the same technology, materials and processes. This standardization is important as any units built by PTI may be subjected to short-circuit testing. In any event certainly all of them will be subjected to real life short-circuit conditions while in service. PTI Transformers LP is more than willing to subject any of our transformers to short-circuit testing.



PTI Manitoba Inc uses trusted suppliers of active part materials, e.g. ASTA and Nexans for copper conductors, Weidmann for pressboard insulation. All materials were subjected to thorough withstand tests.

In North America it is commonly accepted that a design review is done in lieu of short-circuit testing. Subsequently, we have had only a few units short-circuit tested. This is a common practice amongst transformer manufacturers in North America, and has unfortunately recently lead to the termination of operation of a large power laboratory (IREQ in Quebec).

Globally, there has been a discussion going on for decades, whether to test or not to test the short-circuit performance. CIGRE (International Council on Large Electric Systems) during its general session in year 2000 expansively discussed this issue. There was no consensus on this problem, therefore CIGRE decided not to suggest any method for short-circuit performance evaluation, i.e. to (i) select trusted supplier, (ii) perform own design review, (iii) perform design review with consultant, (iv) short circuit testing. Moreover, based on numerous studies, the rate of short-circuit failures in operation has no relation to the way short-circuit performance is evaluated (see CIGRE report by Working Group 12.19 in Electr. No203, August 2003).

In conclusion one may state:

- The fact that only a few transformers built by Winnipeg plant have been short-circuit tested is typical for the North American industry, where design reviews are seen as sufficient method of approving the short-circuit performance of units;
- PTI Manitoba Inc is willing to subject any units to short-circuit tests. The cost for this service would be an extra to the contract.

Regards,

Dr. Waldemar Ziomek,
Director of Research & Development



PTI APPROVED LIST OF VENDORS

Component	Vendor Name	Country of Origin
Core	Elect Steel Inc.	Canada
Power conductor	Elect Group Canada Inc. Steel Inc.	Canada USA
Insulation	Edison Electrically Inc. Product Industries Inc.	USA Canada
Transformer case	J.D. Macdonald Fabricators	Canada
Oil	Emulsion	Germany
Uninsulated	Steel Steel Electric Steel Site	USA Germany Canada
Rectifier	Steel Steel Steel	USA USA
Oil	Steel Elect Canada Automotive Steel	Canada Canada USA
Current transformer	Steel International Mercedes Electric Transformer	Canada USA
Transformer	Steel Steel Ltd. Industrial Steel	Canada Canada
Adapter	Steel Steel	USA USA
Fan	Steel Steel Steel Steel Steel	USA Germany
Accessories	Steel Industries Steel Steel	Canada Canada
Frame	Steel Steel Industries	France Canada

**PTI Transformers LP**

Registered Office & Plant:

101 Rockman Street, Winnipeg, Manitoba R3T 0L7, Canada

T: +1 204 452 7446 F: +1 204 453 8644 W: www.partnertechnologies.net

STORAGE REQUIREMENTS AND COST**I. Storage Requirement**

a. Supplier to provide storage requirements associated with short-term and long-term storage plans. This should include any special inspections or maintenance requirements to be performed by Owner or Supplier.

b. 100% of the total unit ex-works price to be paid within 30 days of placement into storage. Remainder of contract price to be invoiced as services are rendered.

II. Storage Costs at Production Facility

Supplier to define the costs associated with potential storage at Suppliers production facility, at the port or other interim storage facility, and at the Project site.

	Storage Cost	Insurance Cost	Maintenance Cost	Total
Storage at Production Facility	\$500.00 / Mo	\$250.00 / Mo	\$1,000.00/Mo	\$1,750.00/Mo

III. Offsite Storage

Supplier shall receive written consent from Purchaser prior to any offsite Storage

IV. Storage Costs at Onsite/Offsite Storage Facility (Beyond 3 months)

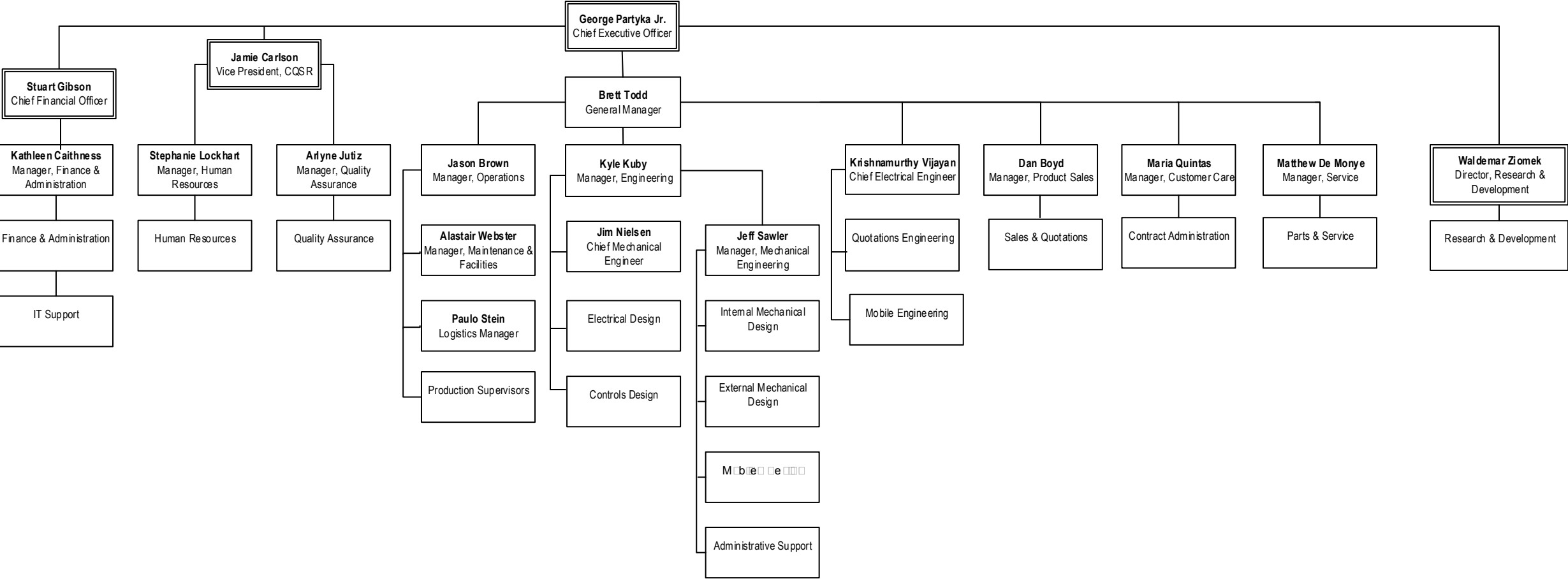
Purchaser is responsible for actual invoiced costs, plus 10% administrative fee. The costs include charges associated with storage, insurance, maintenance, loading, unloading, transport of unit (from factory to storage location) while being stored at an onsite/offsite storage facility, plus 10% administrative fee.

V. Additional Costs Associated with Long-Term Onsite/Offsite Storage (Beyond 6 Months)

If the unit needs to be stored longer than 6 months, then it needs to be filled with oil, which required assembly, oil processing, and filling at the long-term storage facility. Before the unit can be transported to the site, the oil needs to be drained and the unit needs to be disassembled for the transport. Purchaser is responsible for actual invoiced costs, plus 10% administrative fee, for long-term storage and transport preparations. They are in addition to the onsite/offsite storage costs described above.



**PTI Transformers LP
Organization Chart**



Leadership Team:	
Brett Todd	General Manager
Dan Boyd	Manager, Product Sales
Jason Brown	Manager, Operations
Kathleen Caithness	Manager, Finance & Administration
Jim Nielsen	Chief Mechanical Engineer
Jeff Sawler	Manager, Mechanical Engineering
Kyle Kuby	Manager, Electrical Engineering
Maria Quintas	Manager, Customer Care
Stephanie Lockhart	Manager, Human Resources
Arlyne Jutiz	Manager, Quality Assurance

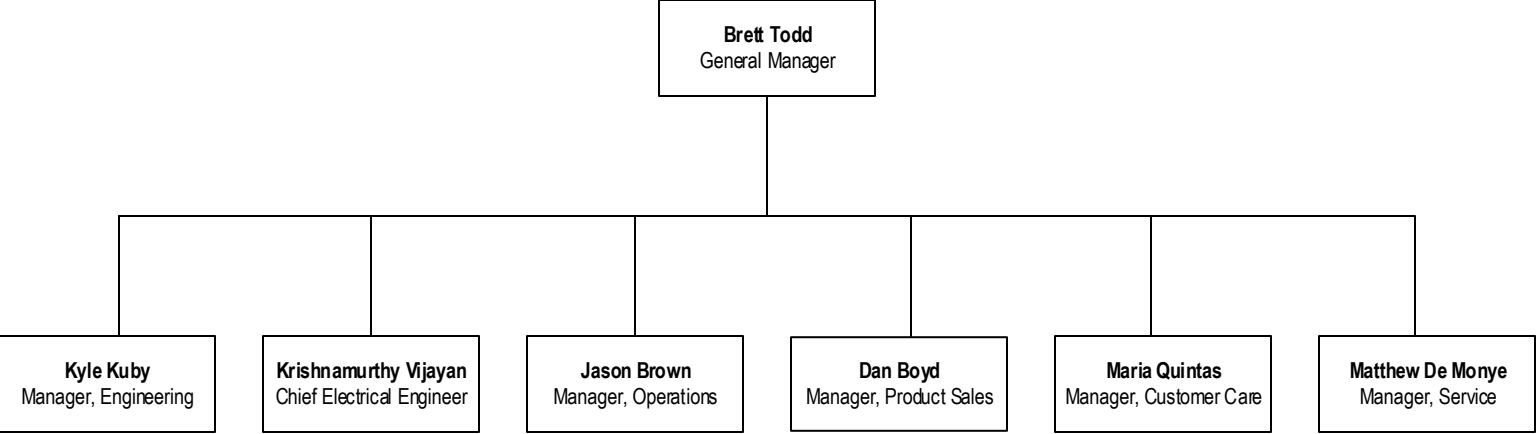
Brett Todd
General Manager

January 2nd, 2023
Date



PTI Transformers LP Organization Chart
Exhibit G - Proposal
Brett Todd Direct Reports

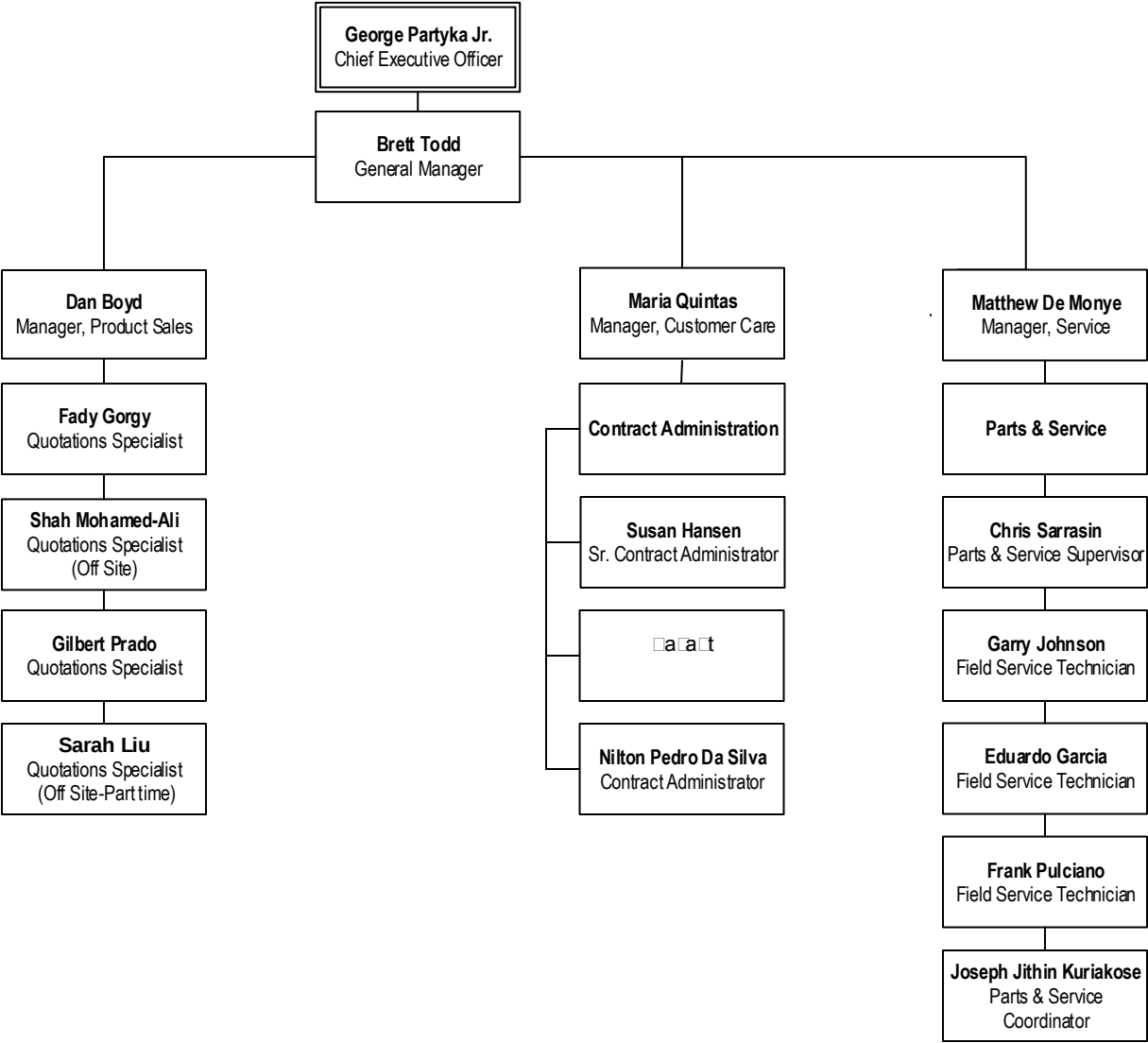
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PTI Transformers LP Organization Chart
Exhibit B - Proposal
Sales & Quotations & Customer Care

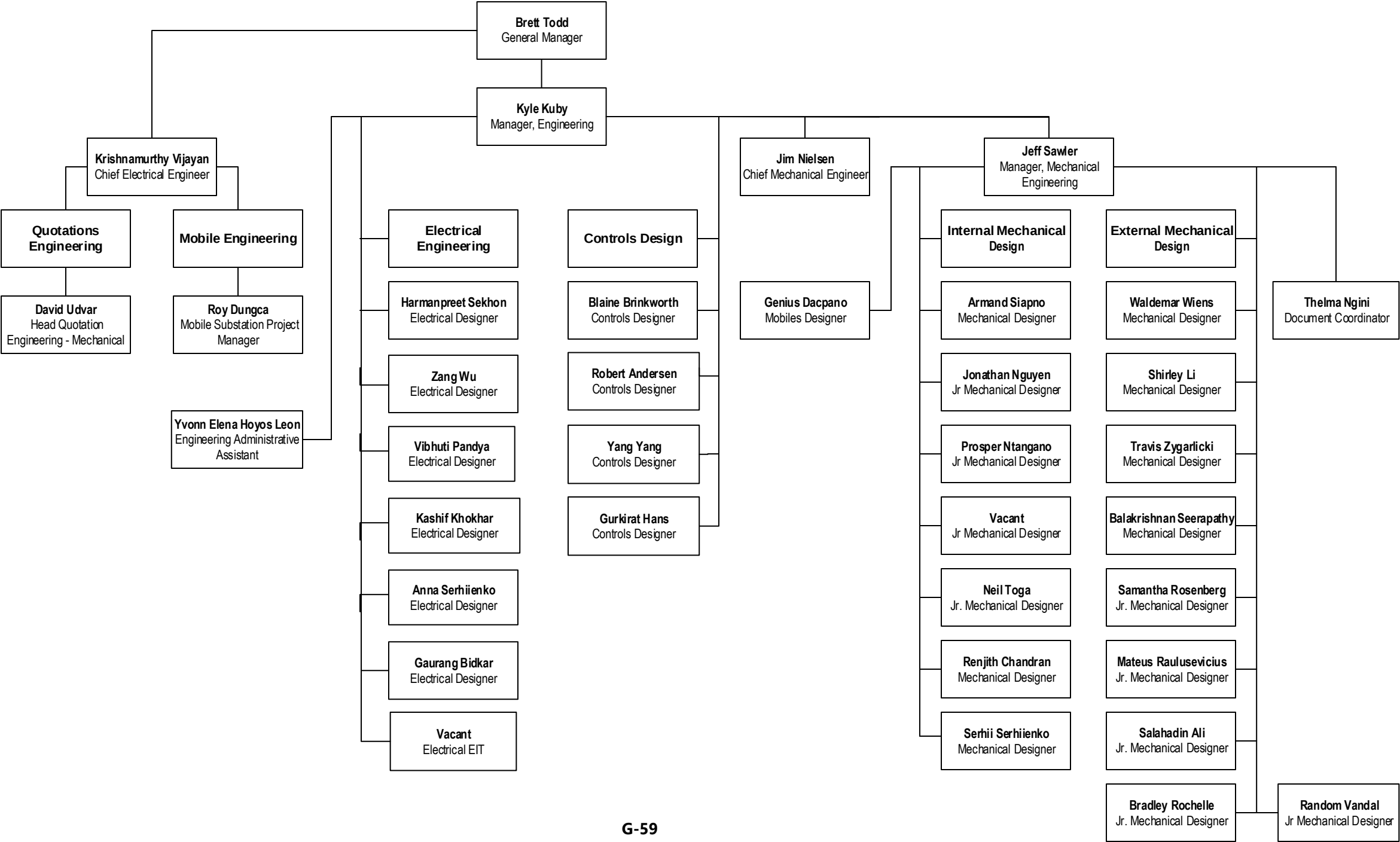
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PTI Transformers LP Organization Chart
Exhibit G - Proposal
Engineering

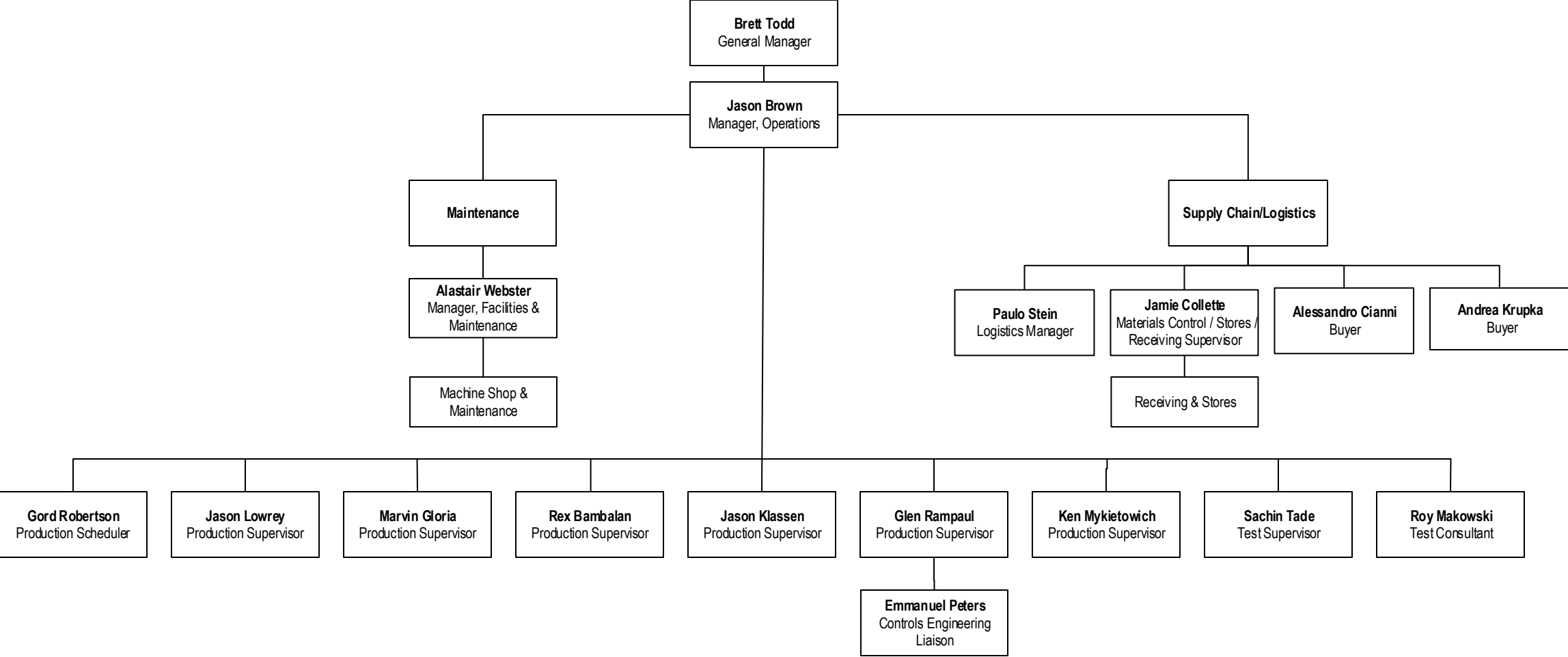
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PTI Transformers LP Organization Chart
Exhibit G - Proposal
Operations

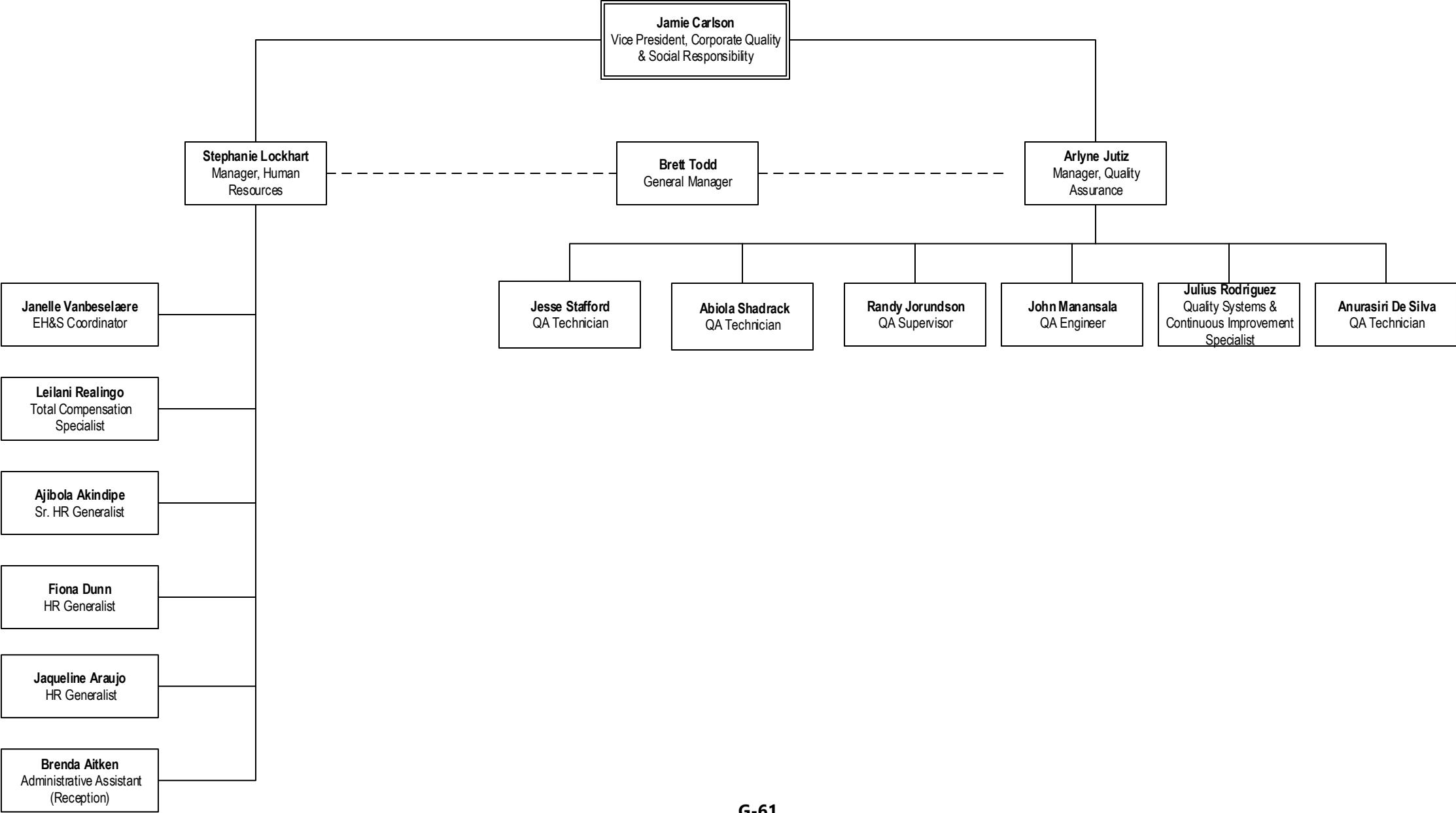
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PTI Transformers LP Organization Chart
Exhibit G - Proposal
Corporate Quality and Social Responsibility

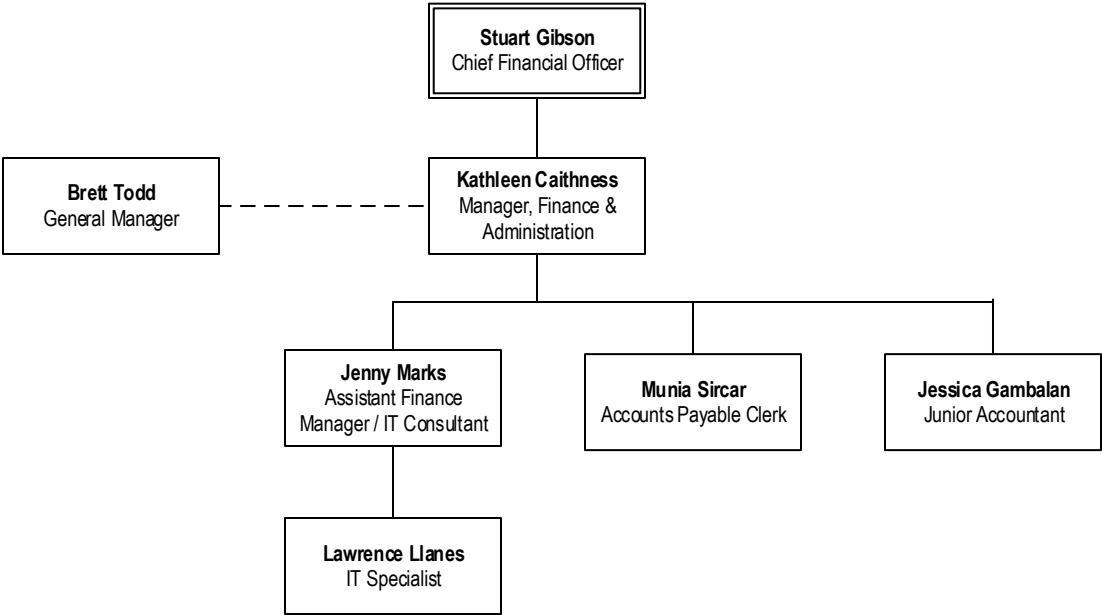
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PTI Transformers LP Organization Chart
Exhibit G - Proposal
Finance & Administration

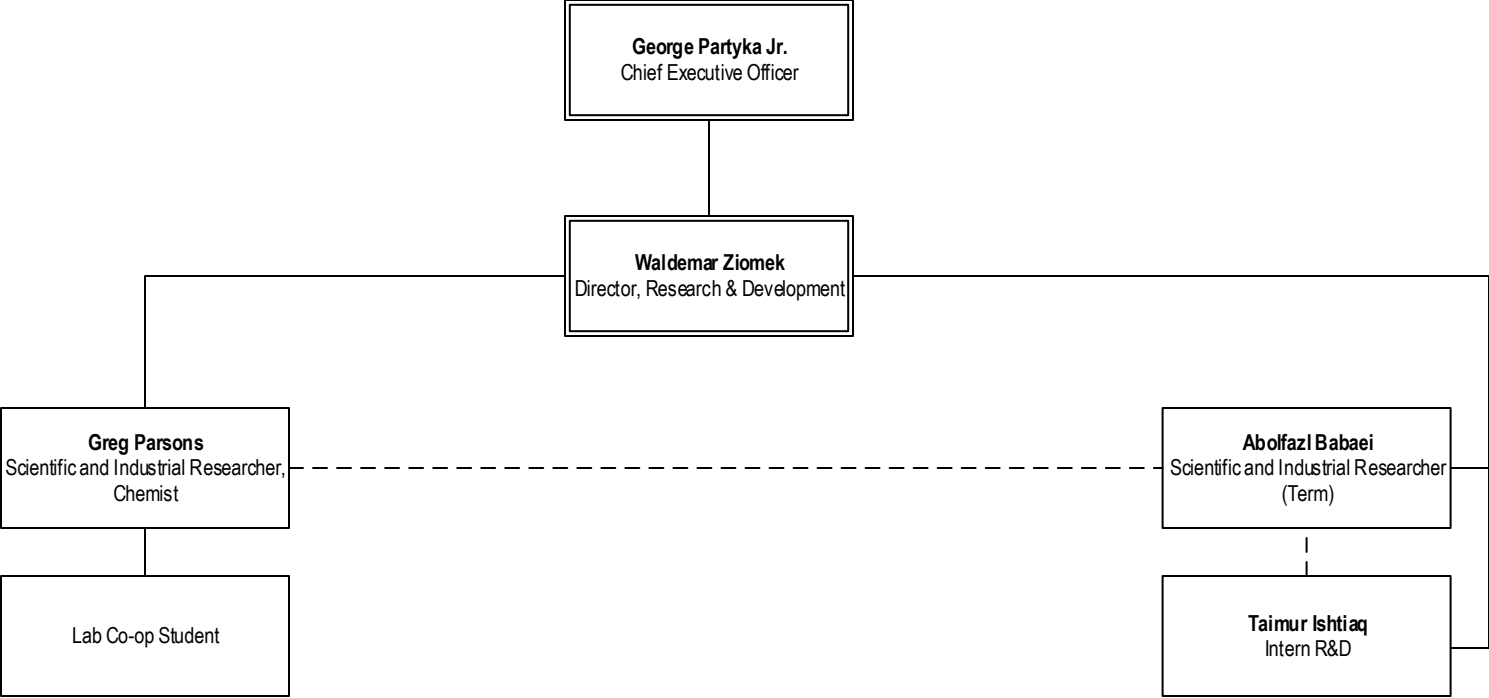
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PTI Transformers LP Organization Chart
Exhibit G - Proposal
Research & Development

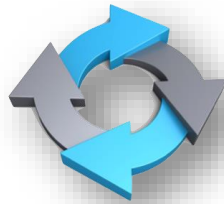
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PTI Transformers LP

101 Rockman St, Winnipeg, MB R3T 0L7



Quality Plan

Quality Plan

1. Determination of Customer Requirements, Communications & Changes

1.1 Quotation & Sales - Scope & project requirements are defined/determined & reviewed, including any applicable statutory and regulatory requirements, delivery and post-delivery activities and those considered necessary. PTI Transformers LP assesses its ability to meet the customer requirements including commercial and technical risks critical to the project before committing to supply products and services. Likewise, confirmation of requirements is sought from customers before acceptance of the order.

1.2 Pre/Post Contract Award Review (PCAR) – As soon as the order is received and confirmed, Sales initiates a Pre-CAR or kick-off meeting across all departments; Contract Admin, Engineering, Manufacturing, QA etc. Contract Administration takes over and performs thorough review of the specifications, project requirements and deliverables then initiates a kick-off meeting with customers. Handles all clarifications and changes and customer communications.

2 Design & Development

2.1 Conceptual Engineering – The Design Team performs a thorough review of customer requirements, which include the original quotations, technical specifications and applicable statutory & regulatory requirements. All these inputs, including lessons learned from similar projects designed and manufactured in the past form part of the technical risk assessment process that the team goes through as a standard practice. The output of this process is a Concept Design (Core & Coil), Critical Items List, Complexity Sheet (technical risk assessment), and serves as the input to the Production Engineering team.

2.2 Risk Assessment – Identification & mitigation of technical risks is a critical step during the development of conceptual design. The results of risk assessment drive additional reviews and quality checks. The output of this process is documented in the Complexity Sheet.

2.3 Engineering Quality Plan (EQP) – EQP covers Concept design and kicks-off with Design Philosophy review. Driven by Engineering, EQP is an extensive and well-structured quality program implemented throughout the design and development processes & stages. The 14-step process is a proven methodology that Engineering team uses to address design related risks. This methodology provides assurance that PTI Transformers LP consistently produces correct, efficient and productive designs that fully conform technically to customer requirements.

Steps	Process
1	Design Philosophy Review
2	Electrical Engineering Design Review
3	Tank Size Review
4	Pre-Outline Design Review
5	Outline Design Review
6	Winding and Coil Design Review
7	Core Clamping Design Review

Steps	Process
8	Unit Assembly Design Review
9	Final Internal Duplicate Design
10	Final External Design Review
11	Final External Design Review
12	Mechanical Engineering Review
13	Control Design Review
14	Control Duplicate Design Review

2.4 Production Engineering – A team of Electrical and Mechanical Engineers and Designers receive Complexity Sheet (risk assessment), Input Documents, Critical Items List, Core & Coil design including preliminary outline drawing from Conceptual Engineering team. Production Design Engineering develops and produce final electrical, mechanical and control designs. Bills of material are created in SAP and material specifications / drawings are then provided to Purchasing. All assembly drawings and instructions are provided to manufacturing. All deliverables such as approval drawings and other requirement documents are provided to and approved by customers.

3. Supplier Quality

3.1 Sub-supplier Qualification – Materials identified in the Critical Item List triggers the Sub-supplier and New Material Qualification process, that is meant to address risks associated with unfit suppliers and sub-standard or poor quality materials. Driven by Purchasing, Suppliers are pre-qualified based on their previous experience and capability to supply materials to PTI's and our customer's specification requirements. The extent of control applied varies on its impact to customer and PTI.

3.2 First Article Inspection – This process is put in-place as part of Sub-supplier and New Material Qualification process. The *first* delivery of materials goes through extensive inspection by qualified QA Inspectors or Engineering personnel as required. The requirements stated in 3.1 & 3.2 must be satisfied before materials can be expedited to production.

4. Production and Inspection & Testing

4.1 Inspection and Testing (ITP) – is the program of inspection and testing or a systematic approach to testing a transformer or components by visual inspection, dimension inspection, welding inspection, functional test, factory acceptance test, etc. with participation of customers and other interested parties.

4.2 Progressive Control Record (PCR) – Issued for each project, PCR provides product/material traceability and general procedures & sequence of assembly steps that shop follows in the manufacture of transformers. Captures evidence and results of manufacturing activities including hold points and inspection criteria as required in the ITP. PCR reflects the actual status of each project.

5. Nonconformance Reports (NCR) & Corrective Action (CAR)

Nonconformance reports & or corrective action reports are issued in any event that a material or project does not conform to set criteria during inspection and test as required in inspection & test plan (ITP). These quality issues generally impact the delivery of projects and may require extensive analysis and additional resources to address them. PTI Transformers LP takes appropriate action based on the nature of the nonconformity and its effect on the conformity of the product or material. NCR/CAR is the focal document/information used in communicating quality issues to all stakeholders both internally and externally (customers & suppliers/vendors) and drives action to address quality issues.

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PTI TRANSFORMERS LP

INTEGRATED MANAGEMENT SYSTEMS MANUAL

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2. INTRODUCTION

This Integrated Management System Manual describes the Environmental and Quality Management Systems as implemented at PTI Transformers LP (PTI).

The integrated management system conforms to the following standards:

ISO 14001:2015 Environmental Management Systems - Requirements

ISO 9001:2015 Quality Management Systems – Requirements

This integrated management system is valid for the following products:

POWER TRANSFORMERS UP TO 1,000 MVA THROUGHPUT

VOLTAGE CLASS UP TO 765 KV

MOBILE TRANSFORMERS

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3. OUR COMPANY

PTI Transformers LP is owned by PTI Holdings Corporation with headquarters in Regina, Saskatchewan.

PTI Transformers LP is its own entity with full responsibility for all business functions.

- ☐ The facility opened in 1946 and has one of the largest installed bases in Canada and USA, hence approximately > 250,000 MVA
- ☐ Footprint: 200,000 sq. ft.
- ☐ Installed Capacity: 10,000 MVA per year

PTI TRANSFORMERS LP



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4. CONTEXT OF ORGANIZATION

A. ORGANIZATION CONTEXT, INTERESTED PARTIES AND SCOPE

A.1 The QMS and EMS applies to all processes, activities, and employees of the location within the company. The facility is located at:

101 Rockman Street,
Winnipeg, MB Canada R3T 0L7

Phone No.: (204) 452-7746
Website: www.ptitransformers.com

A.2 PTI Transformers LP claims no exclusion from the ISO 9001 and 14001 standards.

Organization: PTI TRANSFORMERS LP	
Products, Services, and Produced or delivered: • Design, Manufacture, Delivery and Servicing of small, medium, large and extreme Power Transformers and Mobiles • Services (test and inspection, warranty, assembly, engineering, oil filling, repair, refurbishment) ☐ Parts sales (selected replacement parts)	
Markets, customers, industries, sectors, or segments served: • Utilities, commercial/industrial, renewables, Co-ops, municipalities, • North American market-Electrical power distribution	
Core Realization Processes Performed: • RFQ, electrical and mechanical design, procurement, manufacture, deliver, assemble at site, commission, engineering services, post delivery services, maintenance, invoice, collect payment, consult • Bid, quote, design, build, deliver – duplicate (similar) designs/blanket orders, build client rapport /relationship, After sales services (turnkey), retrofits/upgrades	
Relevant Interested Parties (RIPs) <i>Who are they</i>	Key Interests <i>What they want or expect</i>

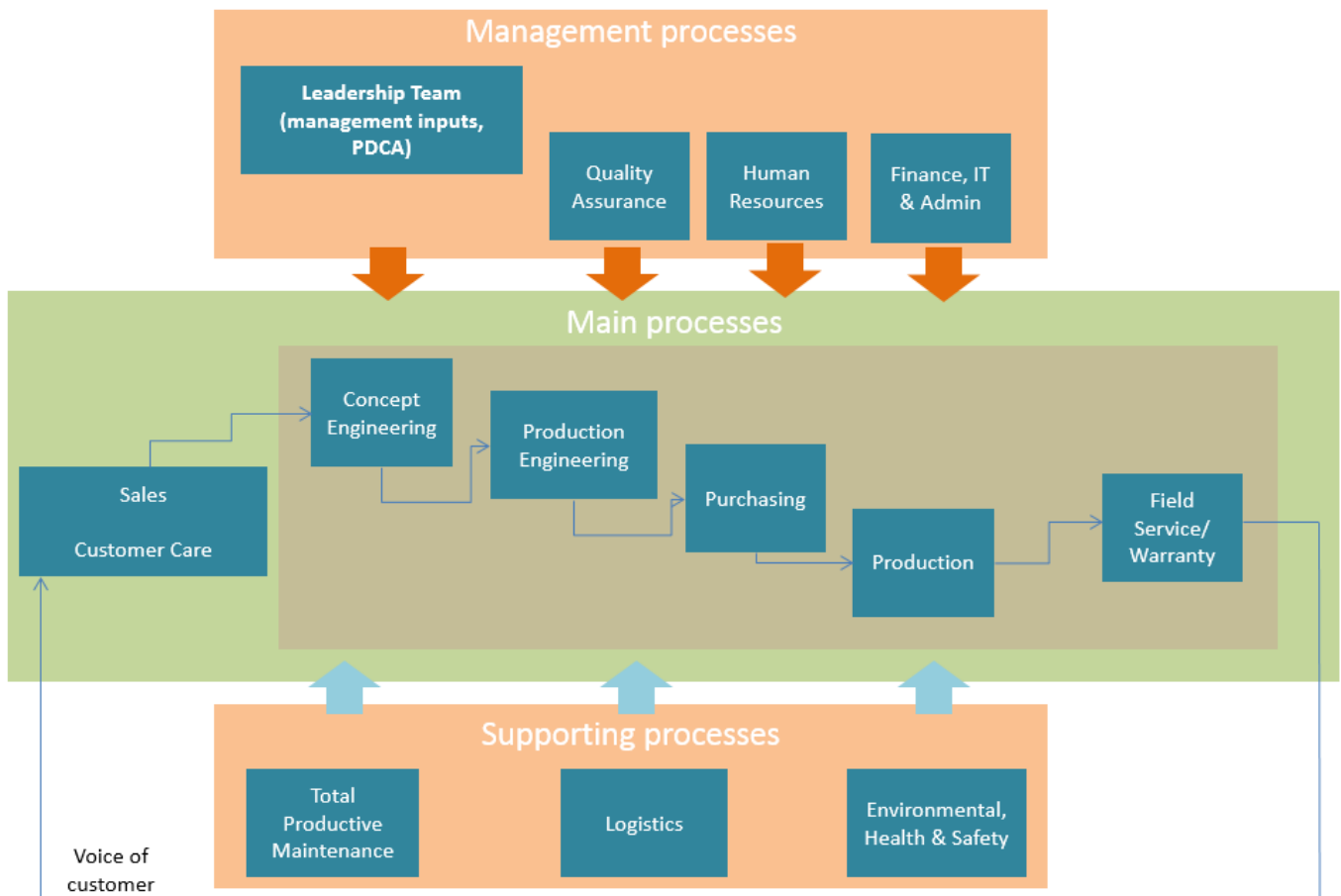
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Customers	- Quality, defect free product, good value for \$, good customer service, on time delivery - Solutions-based products, Innovations
Suppliers (goods & services)	- Mutually beneficial, Long term business relationship, feedback - Timely payment of goods received, material specifications - accurate and complete info to produce product purchased
Employees	- Salary compensation, competitive wages and benefits, career development, good work environment - Job satisfaction, training - Continued employment, safe/healthy working environment
Shareholders	- Repatriate technology, knowledge - Growth/profit - Business continuity, sustained success, reputation
Canadian Business Community (Best Managed Companies, etc.)	Business continuity and success
Standards Organization (CSA Group, ANSI, IEC, ISO, NIST, etc.)	- Accurately offer services and products which provide a satisfactory solution - Avoid relationship mishaps associated with costly variation work - Improve overall performance; provide sound basis for sustainable development initiatives - Market feedback/information/support for organizational initiatives
Others: Community, levels of gov't, agencies (environment), safety & regulatory agencies, schools, charities, hospitals	- Be good corporate citizens, community involvement - Taxes, provincial growth (employment), little impact to environment (noise, pollution, etc.), recycling, pollution control - Compliance to environmental, health and safety regulations

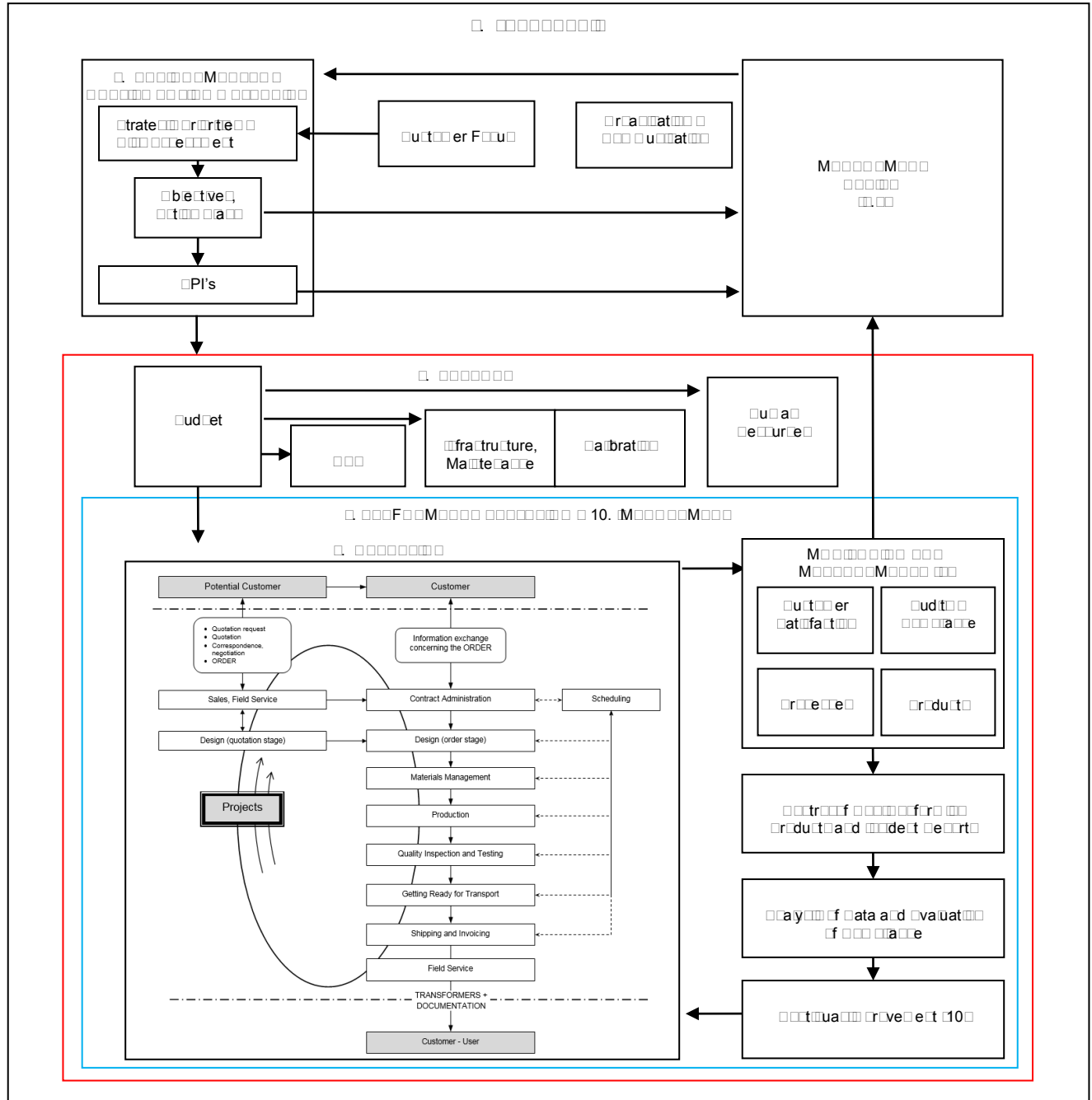
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B. MANAGEMENT SYSTEM PROCESSES AND INTERACTIONS

PTI Transformers LP Process Map



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5. LEADERSHIP

☐ LEADERSHIP AND COMMITMENT

The Leadership Team has the full responsibility and accountability on the effectiveness of PTI Transformers LP Integrated Management System. The team defines the policy and objectives based on the requirements of the system and aligns to the company's context and strategic direction. The team clearly identifies the risk and ensures that adequate resources are provided, information are communicated and continuous improvements are implemented.

PTI Transformers Vision Statement

PTI will be the preferred Canadian manufacturer and service facility of distribution and power transformers up to 600 MVA. We will provide the best combination of quality, price, delivery and service to our customers.

PTI Transformers Mission Statement

PTI's mission is to manufacture and service liquid-filled transformers using innovative, green and customized solutions that bring true value and quality to the Customer. We are committed to investing in our shareholders, community and employees through continuous improvement, corporate citizenship, safety, health and environmentally sustainable practices.

PTI Transformers Core Values

To supply products of the highest quality and value at a price that is competitive in the market place and support these products in a manner that ensures their long-term value to our customers.

To grow the Company by seeking new, innovative business opportunities that are complementary to the markets that we serve.

To create and maintain a safe and healthy working environment for all of our employees.

To share the success of our business with our employees.

To deal with customers, suppliers and employees in a positive, open and friendly manner that focuses on the mutual benefit of our relationships.

To act with absolute integrity in all of our business dealings.

PTI Transformers Four Pillars for Success

Safety, Quality, Happy Customers and Making Money. These are areas where we want to excel. We cannot only excel in some areas- we need to excel in ALL areas. We know if we can excel in all areas then PTI will not only be a successful company but will also be a great place to work. And while not a separate pillar, we believe that implementing environmental stewardship will result in many positive benefits for the company that would support our four pillars such as implementation of our Environmental Management Systems.

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□. INTEGRATED MANAGEMENT SYSTEMS POLICY

"Partner Technologies Incorporated is a leading innovator of transformer technology with expertise in design, manufacture, delivery and servicing of medium and large power transformers using innovative, sustainable and custom-built solutions that bring true value and quality to our customers.

Partner Technologies Incorporated attributes its success through commitment to health, safety, customer service, quality, innovation and the environment.

To ensure customer satisfaction, provision of healthy and safe working conditions and the protection of our environment, we commit to:

(1) *Competitively market our products and services in a professional manner and design, manufacture or repair transformers according to customers' specifications and delivery requirements.*

(2) *Comply with all applicable legal and statutory requirements and the requirements within our management system according to ISO 9001:2015 and ISO 14001:2015 Standard.*

(3) *Develop and sustain a supply chain network that delivers quality products and services, through a mutually beneficial customer-supplier relationship.*

(4) *Provide adequate and appropriate controls to address risks and opportunities arising from external factors such as socio-economic conditions under which PTI Transformers LP operates.*

(5) *Provide adequate and appropriate controls for health, safety and environmental impacts, risks and opportunities arising from our activities to prevent work-related ill health and injury, prevent pollution and reduce adverse potential impacts to the environment.*

(6) *Hold regular meetings and process inspections to ensure compliance to workplace safety and health legislations and the PTI Transformers LP Safety Manual and to ensure that the rights of participation, knowledge and refusal are upheld.*

(7) *Establish objectives and targets based on the evaluation of impacts, risks and opportunities of our activities, products and services and then periodically review and revise them as needed.*

(8) *Conduct periodic audit and management review to assess the continuing suitability, adequacy and effectiveness of the management system and to be able to identify opportunities for continual improvement to enhance health, safety, quality and environmental performance.*

(9) *Promote quality and excellence in every aspect of our business, including employees, customers, stakeholders, and the communities where we live, work, and play.*

(10) *Engage employees and utilize best practices in quality, health and safety, and environmental stewardship to fulfill our corporate responsibilities.*

This policy statement is communicated to all employees and persons working under the control of the organization and will be made available to the public and other interested parties upon request."

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□. ORGANIZATIONAL ROLES, RESPONSIBILITIES AND AUTHORITIES

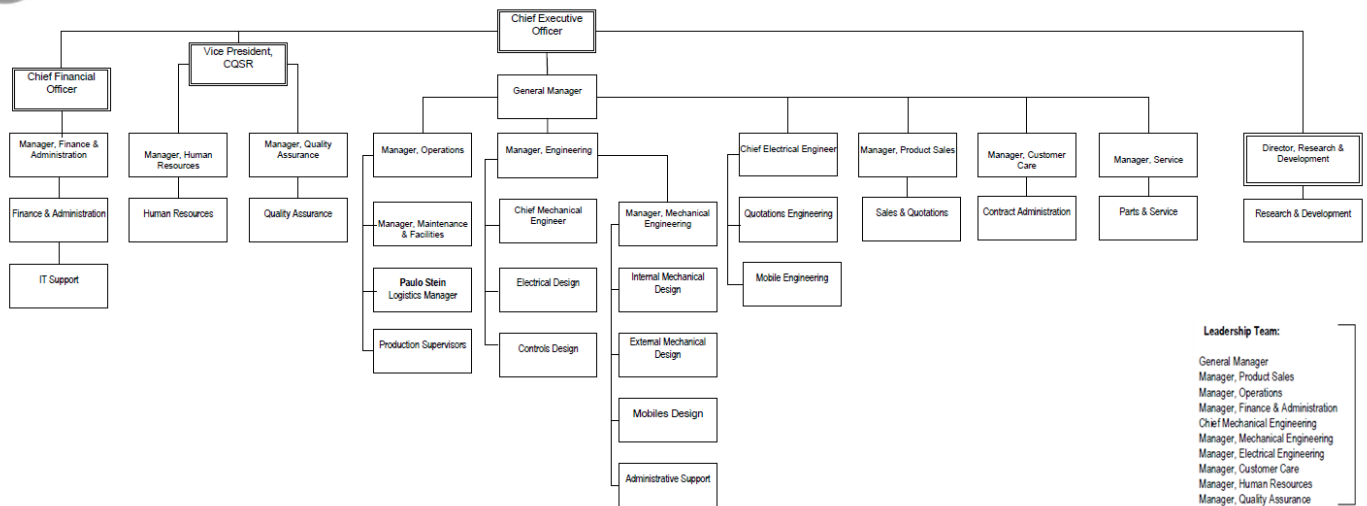
Personnel responsibilities and authorities are specified in job descriptions. Human Resources controls and maintains the records of all job descriptions.

The hierarchical and functional interrelationships are shown in the company organization charts. These charts are made accessible to personnel through the PTI Intranet.

PTI Transformers LP Organizational Chart



PTI Transformers LP Organization Chart



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6. PLANNING

PTI Transformers LP management team takes full responsibility in ensuring that the company manages risks and opportunities relating to stakeholders, the external and internal context and from the quality and environmental aspects. Management teams also ensures that quality and environmental management system meets its intended outcomes, manages external environmental conditions and achieves continual improvement.

A. ACTIONS TO ADDRESS RISK AND OPPORTUNITIES

The Risk Management process of PTI Transformers LP is applied to all departments and summarized in each department's Process Description:

- Leadership Team Process Description QP-00-017
- Quality Assurance Process Description QP-00-018
- Engineering Process Description QP-00-019
- Production Process Description QP-00-020
- Purchasing Process Description QP-00-021
- Administration and Finance Process Description QP-00-022
- Field Service Process Description QP-00-023
- Sales Process Description QP-00-024
- Contract Administration Process Description QP-00-025
- Maintenance Process Description QP-00-026
- Human Resources Process Description QP-00-027

Conceptual Engineering

The Design Team performs a thorough review of customer requirements, which include the original quotations, technical specifications and applicable statutory & regulatory requirements. All these inputs, including lessons learned from similar projects designed and manufactured in the past form part of the technical risk assessment process that the team goes through as a standard practice.

Identification & mitigation of technical risks is a critical step during the development of conceptual design. The results of risk assessment drive additional reviews and quality checks. The output of this process is documented in the Complexity Sheet.

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Engineering Quality Plan (EQP) – EQP covers Concept design and kicks-off with Design Philosophy review. Driven by Engineering, EQP is an extensive and well-structured quality program implemented throughout the design and development processes & stages. The 14-step process is a proven methodology that Engineering team uses to address design related risks. This methodology provides assurance that PTI Transformers LP consistently produces correct, efficient and productive designs that fully conform technically to customer requirements.

Steps	Process	Steps	Process
1	Design Philosophy Review	8	Unit Assembly Design Review
2	Electrical Engineering Design Review	9	Final Internal Duplicate Design Review
3	Tank Size Review	10	Final External Design Review
4	Pre-Outline Design Review	11	Final External Design Review Duplicate
5	Outline Design Review	12	Mechanical Engineering Review
6	Winding and Coil Design Review	13	Control Design Review
7	Core Clamping Design Review	14	Control Duplicate Design Review

Environmental Aspects and Impacts

The assessment of the environmental aspects of PTI which have a significant impact on the environment is important in determining applicable environmental policy. Environmental objectives are derived from the environmental aspects and serve to minimize environmental impacts of business activities which are in line with the company's policy and objectives.

Details of this section can be found in PTI's Aspects and Impacts Matrix (FT-75-026) which are reviewed periodically to ensure continuous compliance and improvements.

B. QUALITY AND ENVIRONMENTAL OBJECTIVES

PTI's objectives and the Key Performance Indicators required for the achievement of objectives are defined and pursued through suitable planning and controlling systems.

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7. SUPPORT

A. RESOURCES

Management determines what human and material resources are needed to execute the company goals and objectives and plans these requirements into the annual budget.

a. PEOPLE

Attraction and employment of competent personnel

In the beginning of the recruitment process, the Department Manager and/or Department Supervisor reviews the job description for the position. Human Resource coordinates and supports the selection process wherein the competencies of the candidate are compared with the requirements of the position.

Evaluation, development and follow-up of the needed competencies

Competencies of salaried and hourly staff are evaluated once a year by means of an annual performance appraisal. This is done through Personnel Competence Management (QP-19-033) and Personnel Assessment Procedure (QP-19-036).

b. INFRASTRUCTURE

Capital Investments - The needs for capital investments in the facility are defined in the annual budget.

Management prepares Request for Capital Expenditure form to initiate the capital expenditure projects. This is an internal document that outlines the needs, requirements, benefits and costs associated with each expenditure. A unique account number is given and all materials and labor are charged to this account.

Progress of each requested budget is reviewed monthly by management.

Total Preventive Maintenance – PTI implements processes to maintain the infrastructure needed to achieve conformity to product requirements. Infrastructure includes buildings, workspaces, production equipment and associated utilities. These processes are used to ensure a safe and healthy work environment that is conducive to achieving conformity of product requirements.

Information Technology – PTI IT policy and work instructions provides guidelines to ensure that all hardware and software technology for the business is appropriate, value for money and where applicable integrates with other technology for the business.

c. ENVIRONMENT FOR THE OPERATION OF PROCESSES

PTI creates and implements policies to ensure that the company provides and maintains suitable and sustainable environment necessary for the operation of processes and to achieve conformity of products and services.

PTI gives highest regard to the safety and health of the employees.

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d. MONITORING AND MEASURING RESOURCES

The calibration and control of electrical, non-electrical and process measuring equipment is managed according to procedure QP-40-005, Calibration of Monitoring and Measuring Device. This is to ensure that all measuring devices are properly identified, calibrated, controlled and stored.

e. ORGANIZATIONAL KNOWLEDGE (RESEARCH AND DEVELOPMENT)

PTI performs activities in research and development field in two major areas:

1. Product development and design- realized within the Engineering group.
2. Fundamental and applied research realized within Engineering in conjunction with manufacturing, with support of the University of Manitoba, R&D and other research/scientific institution as required for given projects.

B. COMPETENCE

Salaried Staff:

All Salaried employees are provided an annual performance review and evaluation which includes a review of the performance of tasks assigned per their job description. Review of the achievement of goals and objectives identified from the previous year, development of goals and objectives going forward. Identification of training and development needs in the upcoming year.

Through this review process Human Resources in conjunction with the Manager/Supervisor will develop and implement any identified training and development needs for the employee.

Record Retention:

Training Records are to be maintained in Human Resources. Completed Performance Reviews are maintained by Human Resources in the employee's personnel file.

New Employee Orientation:

Human Resources shall provide an Orientation to new employees on their first day of employment. The orientation includes company information and HR/payroll/benefit enrollment, along with Environmental, Health and Safety orientation and tour.

Training

Staff:

Additional training needs for an employee are identified on the annual Performance Appraisal form, as well as triggered through Touchpoints for Salary and Hourly employees, and within the Training Matrix for upcoming Health and Safety training.

Human Resources reviews all annual Performance Appraisals and initiates any training needs identified as defined in HR Training Plan.

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PTI Training Plan provides a clear understanding of what must happen to meet the training requirements that have been defined, thus, end-users receive training in the knowledge, skills, and/or abilities required to support the new roles, business processes and/or technology.

Completed training are recorded by Human Resources in the Training Matrix.

Job Specific Training:

Department Supervisors are responsible for ensuring all employees in their department are trained per Training and Development Policy (QP-19-056).

A Trainer will be designated to provide the employee with "task" specific training utilizing Work Instructions.

HR is responsible for maintaining training records for each employee and ensuring an annual review of training requirements.

C. COMMUNICATION

Internal Communication

Communication and awareness within PTI are through various forms such as verbal, email, reports, meetings, presentations, and plant communication sessions.

External Communication

All media / external communication reports shall be conducted by the General Manager (or designate).

Social Media Policy (QP-19-026) is also implemented to set out direction and requirements which must be followed when any PTI Transformers LP employees participates in the social media realm.

D. DOCUMENTED INFORMATION

The QMS and EMS documentation consists of:

1. Policies
2. Integrated Systems Manual
3. Procedures
4. Work Instructions
5. Manufacturing Instructions
6. Forms
7. Training Manuals
8. Drawings and Specifications

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9. Customer Supplied Documents, and

10. Standards.

Documentation and data that affect product quality, inclusive of documents such as standards, customer-supplied specifications and drawings are governed by procedure Control of Documents (QP-00-001).

Records are controlled according to procedure Control of Records (QP-00-002).

All documented information for QMS and EMS are in Integrated Management Systems Master Document Matrix.

8. OPERATION

A. OPERATIONAL PLANNING AND CONTROL

The planning of product realization in PTI Transformers LP is oriented towards the pre-defined goals and objectives set by the Management Team and documented in the company Business Plan.

Key Performance Indicators are set to measure achievement of each goals and objectives.

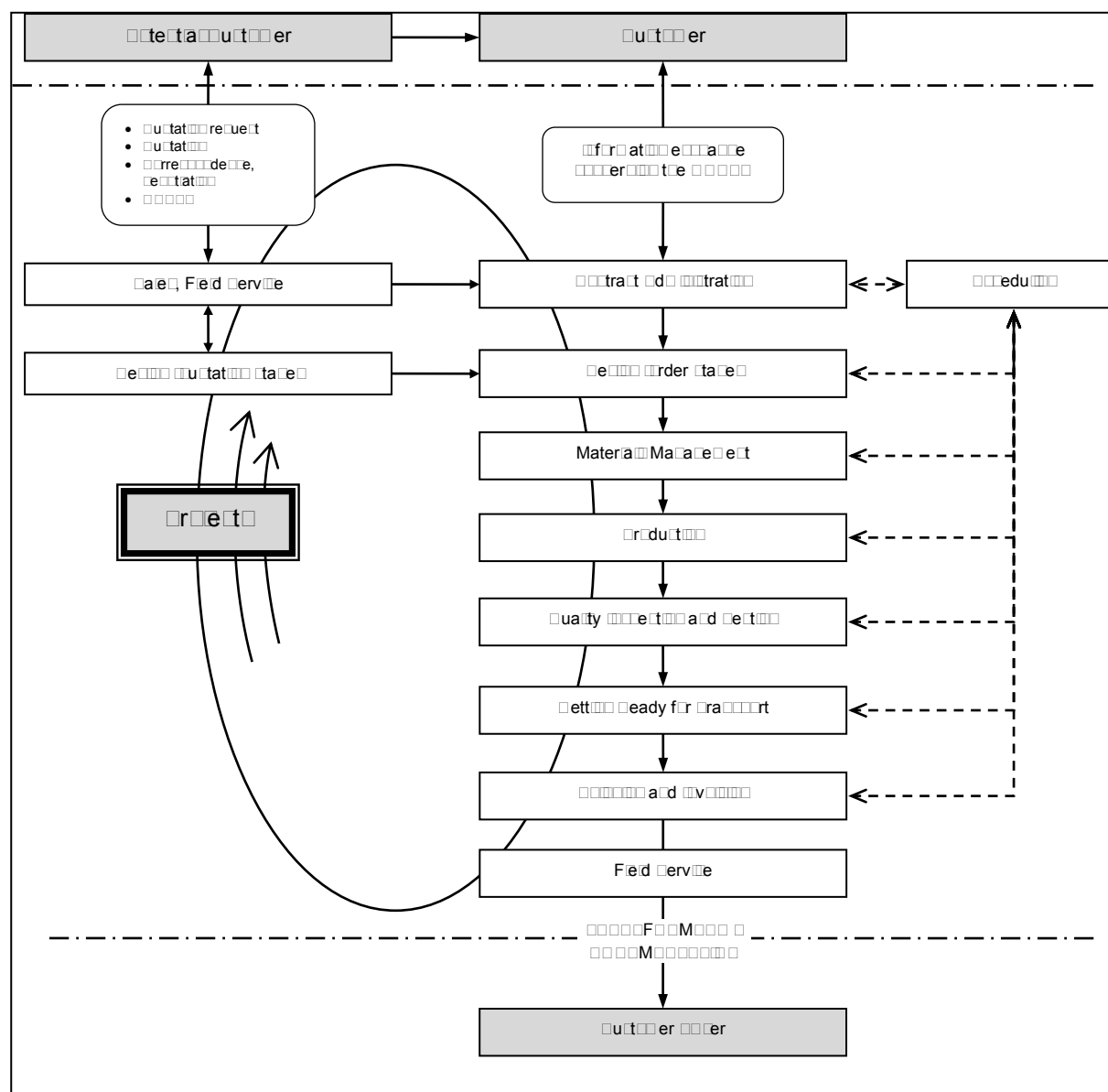
Below figure provides a basic overview of the processes within PTI. Only the processes that directly contribute to the product realization have been incorporated into the flowchart.

It is important to note that PTI is a project driven organization. Projects define the input and the rhythm of the processes. Continual evaluation and improvement of the processes are therefore an automatic outcome of the evolution of the project approach.

Remarks on flowchart:

1. The flowchart suggests a linear and unidirectional flow of the process stream. This is generally true for the production of the transformer, but not for all production-related information exchange.
2. The flowchart represents the process as a consecutive sequence of partial processes. In reality, however, more than one partial process is executed at a given point in time. Consequently, there is not a unique moment of transfer between the partial processes but a continuous transition.
3. During the execution of the project we use the term 'Potential customer' and 'Customer', as only a limited number of quotations leads to an order and as the Customer's representative usually changes after the order is placed (from Buyer to Project Manager). After the project has been completed, we use the term 'Customer – User'.

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B. REQUIREMENTS FOR PRODUCTS AND SERVICES

Quotation & Sales - Scope & project requirements are defined/determined & reviewed, including any applicable statutory and regulatory requirements, delivery and post-delivery activities and those considered necessary. PTI Transformers LP assesses its ability to meet the customer requirements including commercial and technical risks critical to the project before committing to supply products and services. Likewise, confirmation of requirements is sought from customers before acceptance of the order.

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Pre/Post Contract Award Review (PCAR) – As soon as the order is received and confirmed, Sales initiates a Pre-CAR or kick-off meeting across all departments; Contract Admin, Engineering, Manufacturing, QA etc. Contract Administration takes over and performs thorough review of the specifications, project requirements and deliverables then initiates a kick-off meeting with customers. Handles all clarifications and changes and customer communications.

C. INPUT, OUTPUT, OBJECTIVES AND MEASUREMENT OF THE PROCESSES

1. Sales		
Objective:	Acquire orders in accordance with internal agreements and the customer’s requirements.	
Customer(s):	Potential Customer, Contract Administration and rest of the organization	
Process owner:	Sales Manager	
Input(s)		Output(s)
1. Customer request for quotation (RFQ) 2. Technical & Commercial information input required to complete quotation 3. Customer quotation inquiries (questions to quote submitted) 4. Quotation inquiry input 5. New Order		1. Bid Acknowledgement, if required. 2. RFQ data base update 3. Create Tender File 4. Request for quotation input 5. Quotation data base updated 6. Formal response to quotation request 7. Request for inquiry input 8. Response to customer inquiry 9. Updated pricing schedule 10. Negotiated file provided to Contract Administration
Applicable procedure:		
QP-00-003	Sales	
QP-00-024	Sales Process Description	

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2. Design (Quotation Stage)

Objective:	Produce a technically correct preliminary design in accordance with the Customer's technical specifications, internal design rules and official standards. The preliminary design should represent the optimal cost price.	
Customer(s)	Sales, Field Service, Design (order stage), when a quotation leads to an order.	
Process owner:	Engineering Manager	
Input(s):		Output(s):
1. Technical part of the quotation request and technical specifications received from Sales, Field Service. 2. Additional requirements or questions from Sales or the Customer. 3. Price and long-term information from Materials management 4. Guidelines for design, production, testing, and shipping. 5. Official standards		1. A technically complete and correct design representing an optimal cost price for Sales, and/or Field Service which will later become the basis for Design once the order is received.
Applicable procedure		
QP-00-004	Design (Quotation Stage)	
QP-00-019	Engineering Process Description	

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3. Contract Administration

Objective:	Managing the orders and field service activities in order to achieve customer satisfaction and to defend the interests of the organization.	
	Acquire parts orders in accordance with customer requirements.	
	Spearheading communications to and from customers to the organization.	
Customer(s):	Customer, external service providers and rest of the organization	
Process owner:	Customer Care Manager	
Input(s)	Output(s)	
1. Orders from sales department	1. Gathering and distributing all project-related information required by the customer from the organization	
2. Orders direct from Customer	2. Obtaining and distributing all information required by the organization from the customer	
3. Field service requests	3. Coordinating Field Service activities	
4. Additional information from the customer throughout the entire process	4. All order related information for project management once the order has been placed	
5. Input from the entire organization throughout the entire process	5. Obtaining and distributing all information required by the customer from the organization	
6. Information required to quote repairs.		
Applicable procedure		
QP-00-005	Contract Administration	
QP-00-025	Contract Administration Process Description	

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4. Scheduling

<i>Objective:</i>	Create and maintain a production schedule in order to track all processes from the moment the order form is received, up to the point of shipping the order. Maintain this planning schedule and/or adjust it to correspond to reality and the changes requested by the customer.		
<i>Customer(s):</i>	Customer and the rest of the Organization		
<i>Process owner:</i>	Master Production Scheduler		
<i>Input(s)</i>		<i>Output(s)</i>	
1. Detailed information related to orders and confirmed reservations 2. Information related to potential new orders 3. Progress of design and manufacturing 4. Status of production schedule 5. Capacity utilization 6. Information related to manufactured spare parts requirements		1. Monitoring and maintenance of Master Schedule 2. Monitoring and maintenance of order book 3. Order-specific customer schedules 4. Monitoring of capacity utilization	
<i>Applicable procedure</i>			
QP-00-006	Scheduling		
QP-00-020	Production Process Description		

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5. Design (Order Stage)

Objective:	Making a correct and productive design that fully conforms technically to the requirements, at a total cost that is to be kept as low as possible. Producing a production file and customer documents.	
Customer(s)	Materials, Operations, and the Customer	
Process owner:	Engineering Manager	
Inputs:		Outputs:
1. Technical specifications 2. Preliminary design from the quotation stage 3. Planning data 4. Design guidelines, standards, cost information 5. Technical remarks and customer's changes		1. Materials order information 2. Drawings and instructions 3. Design documents for the end customer 4. Transformer Instruction Manuals 5. EQP
Applicable procedure		
QP-00-004	Design (Order Stage)	
QP-00-019	Engineering Process Description	

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6. Materials Management

Objective:	Purchase services and materials as specified by the organization according to the planning schedule and at competitive prices in accordance with product/service quality, customer specifications and vendor capability. Receipt and management of the purchased materials as well as internal supply to various departments.		
Customer(s):	Sales, Field Service, Design, and Production		
Process owner:	Operations Manager		
Input(s)		Output(s)	
1. Design-related information from Design (order stage), planning information, information and quotations from suppliers. 2. Spare-parts requirements from Sales, Field Service 3. Supply of material and planning of material requirements		1. Ordering materials and supply to the appropriate department in accordance with Scheduling 2. Price information and purchasing contracts. 3. Correct internal supply and storage of materials	
Applicable procedure			
QP-00-014	Materials Management		
QP-00-021	Purchasing Process Description		

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7. Production	
<i>Objective:</i>	Manufacturing transformers according to the design, the production schedule, Master Schedule and the applicable procedures, specifications and working methods.
<i>Customer(s):</i>	The Customer (via Contract Administration)
<i>Process owner:</i>	Operations Manager
<i>Input(s)</i>	<i>Output(s)</i>
1. Design-related information from Design (order stage) 2. Materials supply from Materials management 3. Planning information 4. CIS via Contract Administration	1. Supply, Inspection and Testing with a transformer that is ready for testing 2. Parts
<i>Applicable procedure</i>	
QP-00-015	Production
QP-00-020	Production Process Description

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8. Inspection and Testing

<i>Objective:</i>	Organize and/or perform intermediate inspections of Production and Getting Ready for Transport as well as the inspection of incoming materials. Test the finished transformer – whether or not in the presence of the customer – to verify whether all requirements – both of the customer and Design (order stage) – have been fulfilled.	
<i>Customer(s):</i>	The customer (via Contract Administration), Production	
<i>Process owner:</i>	Quality Manager	
<i>Input(s)</i>		<i>Output(s)</i>
1. Incoming materials 2. Transformer under construction 3. Transformer ready for testing 4. Technical specifications: drawings, data schedules, diagrams, test instruction summary (TIS) 5. The Inspection and Test Plan (ITP)		1. A tested transformer or parts 2. Test certificates (issued by PTI and suppliers) and (internal) testing report 3. Measuring results to Design (order stage) 4. Release signal for disassembly
<i>Applicable procedure</i>		
QP-00-028	Inspection & Testing	
QP-00-020	Production Process Description	
QP-00-018	Quality Assurance Process Description	

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9. Getting Ready for Transport

<i>Objective:</i>	Disassemble the tested transformer and pack according to the internal guidelines and the customer's specifications, so the transformer can be shipped safely.		
<i>Customer(s):</i>	Customer, Carrier, Installer, Field Service		
<i>Process owner:</i>	Operations Manager		
<i>Input(s)</i>		<i>Output(s)</i>	
1. Released transformer + testing documents + Transformer Manual 2. Shipping data 3. Outlines, legends, drawings 4. Packing data, specification, special instructions 5. CIS (Contract Administration) 6. Carrier instructions		1. Painted, packed and marked transformer 2. Dimensions and weights 3. Final packing list 4. Parts	
<i>Applicable procedure</i>			
QP-40-010	Getting Ready for Transport		
QP-00-018	Quality Assurance Process Description		

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10. Shipping and Invoicing

<i>Objective:</i>	Organize the shipping of the transformers (+ accessories) and invoice according to the contractual agreements + providing documentation for export purposes	
<i>Customer(s):</i>	The Customer or his representative, the carrier, and the organization (mainly Contract Administration including Finance & Administration)	
<i>Process owner:</i>	Finance Manager, Operations Manager	
<i>Input(s)</i>	<i>Output(s)</i>	
1. Outlines, legends, drawings	1. Shipping orders for transformers + accessories	
2. Shipping and invoicing order from Contract Administration	2. Shipping documents: import - export	
3. Delivery and/or payment conditions	3. Invoicing	
	4. Customs documents	
<i>Applicable procedure</i>		
QP-00-008	Shipping and Invoicing	
QP-00-022	Finance and Administration Process Description	

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11. Field Service

<i>Objective:</i>	Organize, and execute the assembly, commissioning, testing of transformers in the field.	
<i>Customer(s):</i>	The Customer or his representative, the carrier, and the organization; Third party contractor, Contract Administration, Finance, Testing	
<i>Process owner:</i>	Customer Care Manager; Testing, Engineering	
<i>Input(s)</i>	<i>Output(s)</i>	
1. Transformer, delivery 2. Outlines, legends, drawings, RFQ for third party contractor 3. Assembly materials 4. P.O. for materials, contractors	1. Assembled, tested, commissioned transformer 2. Field test reports 3. Invoicing	
<i>Applicable procedure</i>		
QP-00-026	Field Service Process Description	
QP-00-025	Contract Administration Process Description	

D. EMERGENCY RESPONSE

PTI is committed to taking appropriate measures to effectively respond to emergencies, with the primary goal of preserving life, protecting the environment/property, and restoring operations as quickly as possible.

A policy is created and implemented to ensure that PTI prepares for and responds effectively to an emergency situation through the appropriate use of resources and mitigates the long-term effects of an emergency on its operations.

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E. CONTROL OF EXTERNALLY PROVIDED PROCESSES, PRODUCTS AND SERVICES

a. Supplier Quality Assurance

Supplier Quality Assurance is PTI's confidence in supplier's ability to deliver goods or service that will satisfy the company's requirements which can be achieved through interactive relationship between PTI and supplier.

Sub-supplier Qualification – Materials identified in the Critical Item List triggers the Sub-supplier and New Material Qualification process, that is meant to address risks associated with unfit suppliers and sub-standard or poor-quality materials. Driven by Purchasing, Suppliers are pre-qualified based on their previous experience and capability to supply materials to PTI's and our customer's specification requirements. The extent of control applied varies on its impact to customer and PTI.

First Article Inspection – This process is put in-place as part of Sub-supplier and New Material Qualification process. The first delivery of materials goes through extensive inspection by qualified QA personnel with Engineering personnel as required. The requirements must be satisfied before materials can be expedited to production.

F. PRODUCTION AND SERVICE PROVISION

a. Manufacturing and Work Instructions

PTI ensures that all processes are covered and documented to provide visual and comprehensive guidelines and instructions for manufacturing of transformers.

These instructions also contain:

- ☐ Pertinent Engineering Specifications
- ☐ Quality, Environmental and Safety notes

b. Identification and Traceability

Transformer and its components can be identified and allocated throughout the entire process from raw materials to finished product through Identification and Traceability Procedure (QP-40-006).

G. RELEASE OF PRODUCTS AND SERVICES

Product characteristics are monitored and measured at various stages throughout product realization. The Engineering Quality Program (EQP) monitors and records the conformity of product throughout the design process. Various production activities and product inspections throughout the manufacturing process are identified, monitored and recorded through the Progressive Control Record (PCR) books.

Only product that has passed all required in-process and final inspections and tests will be released to the customer.

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H. CONTROL OF NON -CONFORMING OUTPUTS

Non-conformances are identified, segregated and disposed of in accordance with Control of Non-Conformance Procedure (QP-00-013) for product and process related issue. While Incident Investigation (SP-75-005) investigates Environmental, Health and Safety incident and near misses to obtain and analyze the pertinent facts to prevent reoccurrence of similar incidents in the future.

Customer Complaints

A complaint is the reporting of substandard quality as perceived by the customer.

Any employee may establish or receive a customer complaint and will ensure that the complaint is registered with Contract Administration for follow-up. Field complaints may be received by Contract Administration or by Field Service. Field Service and/or Contract Administration will acknowledge receipt of the complaint and initiate action and resolution of the complaint through the Complaint Response Team.

Field Service and/or Contract Administration will acknowledge receipt of the complaint and initiate action and resolution of the complaint through the appropriate departments.

Complaints are analyzed and the results reported at Management Review.

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9. PERFORMANCE EVALUATION

A. MONITORING, MEASUREMENT, ANALYSIS AND EVALUATION

Quality and Environmental Management System processes are monitored and measured by the respective Process Owners through their selected KPI's. Process owners must select KPI's that allow them to monitor their process or department's performance, and be able to react where corrections or improvements are required.

The measurements are reported and reviewed regularly to identify opportunities for improvement and to track the effectiveness of implementation.

The driving force behind continual improvement ultimately lies at the level of management responsibility: the management outlines the policy and the planning and provides the necessary resources to realize the product. Data related to achievements with regard to customer satisfaction, system, processes and product and environmental, health and safety compliance are gathered and reported back to the management through management reviews. The review conclusions serve as input to changes of the policy, objectives and KPI's. The circle of improvement is therefore reviewed and closed at the highest level of the company.

a. Customer Satisfaction

Customer satisfaction is of paramount importance and is the primary responsibility of every employee.

Customer feedback is obtained through various sources such as a Customer Satisfaction Survey, customer complaints and field service reports. Data from each source is analyzed and the results are presented at Management Review. Based on the results, corrective and/ or preventive actions may be required.

B. INTERNAL AUDIT

The purpose of internal audit is to evaluate and improve the effectiveness of governance, risk management and control processes as defined in the company's quality and environmental management system and related processes.

Internal audits are not limited within their scope and may address processes and activities that contribute to customer satisfaction or continual improvement.

Periodic internal audits will be carried out to determine the effectiveness of the quality management system. The Quality Manager is responsible for organizing and managing the audit program and required follow-up according to Internal Audit Procedure (QP-00-012).

The results of internal audits and the status of corrective actions are reported in the Quality Management Review. The implementation and effectiveness of the corrective actions are verified and reported during follow-up audits.

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C. MANAGEMENT REVIEW

Management review and evaluate the quality and environmental management system a minimum of twice yearly during the Management Review Meeting.

Actual compliance with Integrated Management Systems to ensure reliability and continuity of products. The following, but not limited to, ISO 9001 and 14001 requirements should be reviewed during management meetings:

- status of actions from previous management reviews
- changes in external and internal issues that are relevant to Quality and Environmental Management System
- information on performance and effectiveness of the management systems
- the extent to which the objectives have been achieved
- adequacy of resources
- effectiveness of actions taken to address risks and opportunities
- opportunities for improvements

Results of this meeting are decisions and actions to increase customer satisfaction and improve the overall quality of products and services provided by PTI to all customers both internal and external.

Output data of analysis are formalized in Meeting Minutes with necessary actions, responsibilities and completion dates and should be confirmed by top management. The output data are any solutions and actions related to:

- conclusions on the continuing suitability, adequacy and effectiveness of the quality and environmental management system any need for changes to the management systems
- decisions related to continual improvement opportunities
- decisions related to any need for changes to the quality and environmental management system, including resources
- actions, if needed, if objectives are not achieved
- opportunities to improve integration of the environmental management system with other business processes, if needed
- any implications for the strategic direction of the organization

On an annual basis, the management reviews and evaluates the quality policy, quality objectives and key performance indicators and assesses any need for changes to the quality management system.

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10. IMPROVEMENT

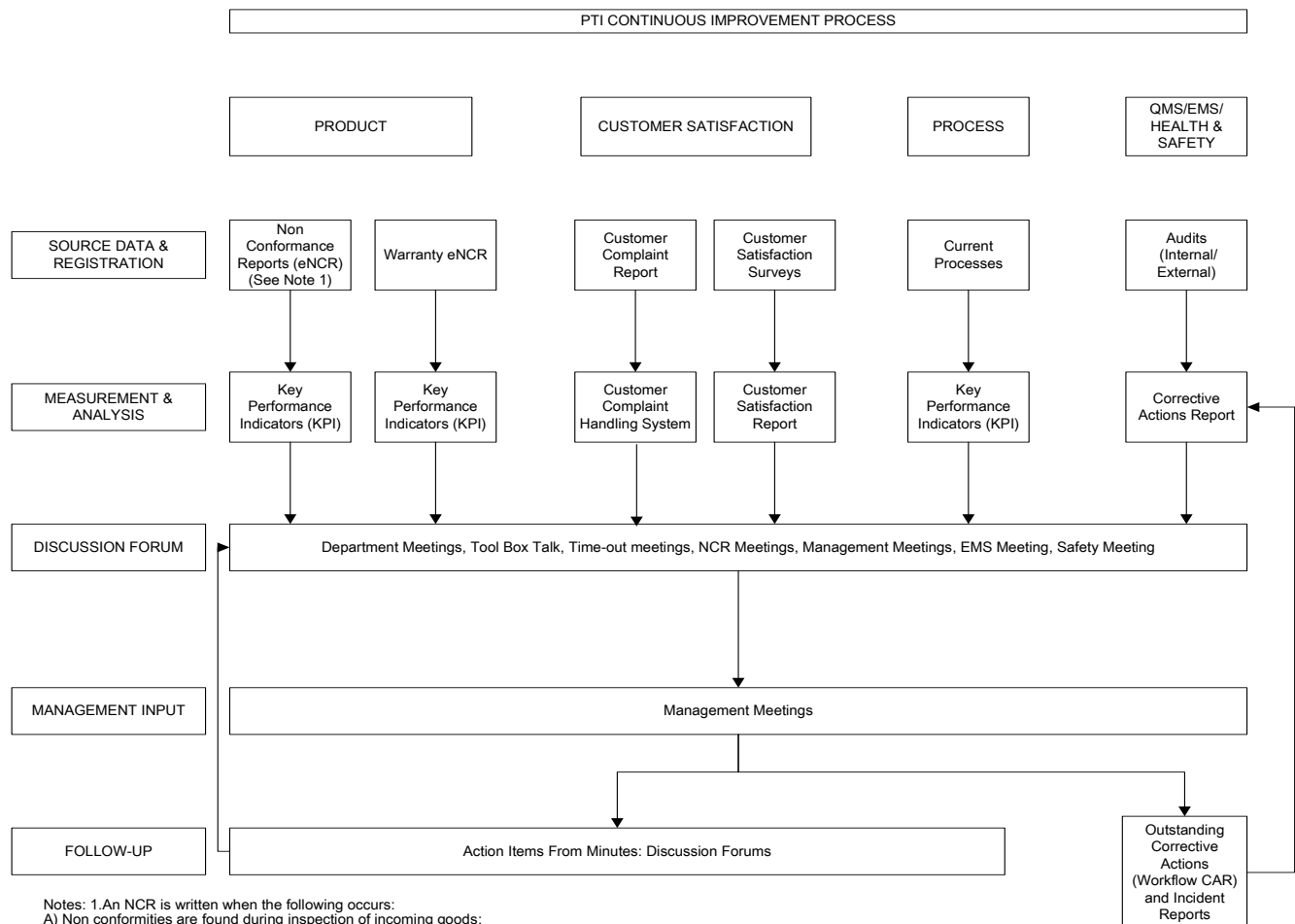
A. NON-CONFORMITY AND CORRECTIVE ACTION

Corrective action is implemented through Control of Non-conformances according to procedure QP-00-013 and through Corrective Action Requests according to procedure QP-00-010.

Preventive action is implemented according to procedure QP-00-011.

B. CONTINUAL IMPROVEMENT

The process by which PTI identifies and implements continual improvement is outlined in procedure QP-00-009.



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11. Approval List

Responsibility Center: Quality	Prepared by & Accepted for QA: Arlyne Jutiz <i>Original signed</i>	Date: <i>Intentionally left blank</i>
Accepted for Leadership Team: Brett Todd <i>Original signed</i>	Accepted for Operations: Jason Brown <i>Original signed</i>	Accepted for Human Resources: Stephanie Jacobs-Lockhart <i>Original signed</i>
Accepted for Customer Care: Maria Quintas <i>Original signed</i>	Accepted for Sales: Dan Boyd <i>Original signed</i>	Accepted for Finance & Admin: Kathleen Caithness <i>Original signed</i>
Accepted for Engineering: Jim Nielsen <i>Original signed</i>	Accepted for Engineering: Jeff Sawler <i>Original signed</i>	Accepted for Engineering: Kyle Kuby <i>Original signed</i>

12. Revision History:

Rev	Revised by	Date	Brief Description of revision
8	Arlyne Jutiz	April 24, 2020	☐ Add PTI Vision, Mission and Core Values on 5A ☐ Made changes on #2 (page 4), #3 (page 5), 4B, 9C and 10B ☐ Update Organizational Chart
9	Arlyne Jutiz	January 19, 2021	☐ Update Organizational Chart
10	Arlyne Jutiz	April 1, 2021	☐ Updated Sections 4.A and D
11	Arlyne Jutiz	March 15, 2022	☐ Added reference to Environmental Aspects and Impacts (FT-75-026) and company website on Section 4 ☐ Added PTI Four Pillars of Success in Section 5 ☐ Updated reference for "Training" from QP-19-033 to QP-19-056
12	Arlyne Jutiz	January 9, 2022	☐ Updated Organizational Chart ☐ Revised 7A a People, 7B New Employee Orientation, 7B Training

PTI TRANSFORMERS LP	SAFETY AND HEALTH POLICY	
Quality Management System POLICY	Document Number: SP-75-001	

At PTI Transformers, we are committed to driving an occupational safety and health culture, preventing occupational illnesses and injuries, and supporting mental wellness in our workplace. This will be accomplished through transparent and consistent application, monitoring and continuous improvement of our health and safety management and internal responsibility systems by eliminating hazards and reducing risks that may cause workplace injury, illness and/or damage to property.

Driven to comply with all applicable health and safety legislation, best practices and other related standards, and our company values, we aim to create and maintain a safe and healthy working environment for all of our employees. In fulfilling this commitment, we develop employee safety and health competency through effective training and leadership at all levels in the organization. This means that PTI will provide sufficient information, instruction, training, and supervision to ensure the safety, health and welfare of its employees in the workplace.

Our Joint Workplace Safety and Health Committee will regularly meet to inspect, discuss and make recommendations as appropriate with the objective of positively contributing to the health and safety of our employees and workplace. Through employee consultation and collaboration, we will continually strive to make improvements in our health and safety management systems.

The right to work in safe and healthy conditions applies to all PTI employees, on-site contractors and visitors. We will also endeavour to be a steward of the environment and our community that may be impacted and may be affected by PTI activities. Everyone working with or for PTI is expected to take ownership of their own health and safety, and that of those around them.



George T. Jr. Partyka
CEO

February 11, 2021

Date

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PTI TRANSFORMERS LP	SAFETY AND HEALTH POLICY	
Quality Management System POLICY	Document Number: SP-75-001	

1. **Purpose**

The purpose of the Health and Safety Policy is to create a safe and healthy working environment for all of PTI's employees including contractors.

2. **Scope**

This policy applies to all employees, contractors, and visitors of PTI Transformers in Manitoba.

3. **Definitions**

Competent: possessing knowledge, experience, and training to perform a specific duty.

Contractor: means a person who, pursuant to one or more contracts, directs the activities of one or more employers or self-employed persons involved in work at a workplace.

Internal System of Responsibility ("IRS"): an employee-employer partnership in ensuring a safe and healthy workplace.

Manitoba Regulation ("The Regulation"), 217/2006

Owner: in relation to any land or premises used or to be used as a workplace, includes (a) a trustee, receiver, mortgagee in possession, tenant, lessee, licensee or occupier of the land or premises, and (b) a person who acts for or on behalf of an owner as an agent or delegate, but does not include a person who occupies premises used as a private residence, unless that person carries on a business, profession or trade at that residence.

The Manitoba Workplace Safety and Health Act ("the Act"), Chapter W210 10/02

4. **Roles, Responsibility and Authority**

4.1. Employer Safety Responsibilities

PTI is responsible for the safety, health and well-being of all employees while they are at work by developing and effectively applying sound safety policies and procedures in the workplace.

The responsibilities include but are not limited to:

- Ensure the safety, health and welfare at work of all workers;
- Ensure that the activities of PTI's workers do not negatively affect the health, safety or welfare of other workers or any self-employed person at the place of employment;
- Ensure that any person(s) who are not in PTI's employ are not exposed to risks to their safety or health arising out of, or in connection with activities from PTI;

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PTI TRANSFORMERS LP	SAFETY AND HEALTH POLICY	
Quality Management System POLICY	Document Number: SP-75-001	

- Consult and co-operate in a timely manner with the health and safety committee for the purpose of resolving concerns on matters of health, safety and welfare at work;
- Consult and co-operate with the workplace safety and health committee, regarding the duties and matters with which that committee is charged under the Act;
- Ensure that there is a reasonable attempt to resolve, in a timely manner, concerns raised by the health and safety committee;
- Co-operate with any other person exercising a duty imposed by the Act, or the regulations;
- Provide to all employees such information, instruction, training, supervision and facilities to ensure the safety, health and welfare at work of all PTI workers;
- Comply with the Act and the Regulations;
- Provide and maintain a workplace, necessary equipment, systems and tools that are safe and without risks to health, so far as is reasonably practicable;
- Ensure when PTI's employee(s) are working on a construction project that has a prime contractor, advise the prime contractor of the name of the supervisor of PTI's workers on the project
- Ensure the provision and maintenance of plant, systems of work and working environments for the health, safety and welfare at work of PTI's workers;
- Oversee and facilitate the use, handling, storage and transport of articles and substances in a manner that protects the health and safety of workers;
- Maintain a safe means of entrance to and exit from the place of employment and all worksites and work-related areas in or at the place of employment
- Ensure that all workers, supervisors, foremen, chargehands or similar persons, are acquainted with any safety or health hazards which may be encountered by the workers in the course of their service, and that workers are familiar with the use of all devices or equipment provided for their protection;
- Ensure all work at the place of employment is sufficiently and competently supervised by a person who is competent with the knowledge, training or experience, to ensure that work is performed in a safe manner, and is familiar with this Act and the regulations that apply to the work performed at PTI.

4.2 Managers and Supervisory Safety Responsibilities

Managers and Supervisors are responsible for the promotion of health and safety awareness in their respective areas of responsibility. They are expected to demonstrate its importance, on a daily basis, through their actions and attitudes.

Managers and Supervisors responsibilities include but are not limited to the following:

- Take all precautions necessary to protect the safety and health of a worker under their supervision,
- Ensure that employees under their supervision works in accordance with the procedures and measures required by the Act and the regulations;
- Ensure that all employees under their supervision use all devices; and wears all clothing and personal protective equipment designated and provided by PTI or required to be used or worn by the Act or the regulations;

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- Advise all employees under their supervision of all known or reasonably foreseeable risks to safety and health in the area where the worker is performing work;
- Ensure, insofar as is reasonably practicable, that all workers under the supervisor's direct oversight and direction are not exposed to harassment at the place of employment;
- Co-operate with any other person exercising a duty imposed by the Act or the regulations; and comply with the Act and the regulations.

4.3 Employee Safety Responsibilities

Employees shall take care to protect their own safety and health, and the safety and health of others that may be affected by their own actions or omissions at work.

Employee responsibilities include but are not limited to the following:

- At all times, use all safeguards, safety appliances devices and wear all articles of clothing and personal protective equipment designated and provided for their protection by PTI, or required to be used and worn by the regulations charged under the Act
- Consult and co-operate with the Workplace Safety and Health Committee regarding the duties and matters with which that committee is charged under the Act;
- Co-operate with PTI in the discharge of PTI's responsibilities;
- Follow the safe work practices and procedures required by or developed pursuant to the regulations and any other regulations made pursuant to the Act;
- Conduct himself/herself at work in a safe and responsible manner and refrain from causing or participating in the harassment of another worker;
- Comply with the Act and the regulations and co-operate with any other person exercising a duty imposed by the Act or the regulations.
- Report any dangerous procedure, hazard, or dangerous condition to own supervisor immediately. In the event there is no resolution to these concerns, report conditions or problems to the Safety and Health Committee member.

4.4 Self Employed Persons, Contractors and Owners Safety Responsibilities

Self employed persons, contractors, and owners shall take care to protect their own safety and health, and the safety and health of others that may be affected by their own actions or omissions at work.

Responsibilities include but are not limited to the following:

- Ensure that every workplace that is in a contract with the contracting employer, and every work process or procedure performed that is not in the direct and complete control of a self-employed person, contractor or owner does not create a risk to the safety and health of any person;
- Where the contractor is involved in work on a construction project that has a prime contractor, advise the prime contractor of the name of every employer with whom the contractor has contracted to perform work on the project;

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- Ensure, so far as is reasonably practicable, that the land or premises used as a workplace that is under his or her control is provided and maintained in a manner that does not create a risk to the safety or health of any person;
- Ensure, insofar as is reasonably practicable, that any area of the plant, or activity occurring in or on an area of the plant, that is not in the direct and complete control of any contractor or employer who works or employs one or more workers who work in or on the plant, is maintained or is carried on in compliance with the Act and the regulations and does not endanger the health or safety of any contractor, employer, or worker who works in or on the plant;
- Co-operate with any other person exercising a duty imposed by the Act or the regulations, and at all times, comply with the Act and the regulations; and
- Report any dangerous procedure, hazard, or dangerous condition to your supervisor immediately. In the event there is no resolution to these concerns, report conditions or problems to your Safety and Health Committee Member.
- Comply with the Act and the regulations.

4.5 Workplace Safety and Health Committee

The role of the Safety and Health Committee is to monitor the effectiveness of the internal responsibility system in the workplace, make recommendations to PTI and assist in the prevention of incident, injury and illness.

Duties of the Safety and Health Committee include:

- Continually assist to maintain the effectiveness of the IRS.
- Receive, consider, and resolve complaints relating to safety and health in the workplace.
- Identify safety and health risks in the workplace and develop measures to address these risks.
- Make recommendations to PTI Transformers LP to address safety and health concerns in the workplace.
- Inspect the workplace, including work processes and procedures, at least once before each regularly scheduled meeting.
- Maintain records pertaining to workplace accidents, injuries, hazards, and complaints related to safety and health in the workplace.
- Develop and promote workplace safety and health informative materials.
- Participate in the investigation of accidents and dangerous occurrences in the workplace.
- Accompany a safety and health officer conducting a workplace inspection or investigation upon request.
- Keep employee's personal health information confidential unless the disclosure is required or permitted by law.
- Helping orient new and inexperienced workers.
- Handle refusals to work under section 43(1) of the Act, when applicable.
- Other duties as may be specified in The Manitoba Workplace Safety and Health Act.

5. Due Diligence

Due diligence is the level of judgment, care, prudence, determination, and activity that a person would reasonably be expected to do under particular circumstances. When applied to occupational safety and health, due diligence

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means that PTI shall take all reasonable precautions, under the particular circumstances, to prevent injuries or incidents in the workplace.

To establish due diligence, PTI must identify possible workplace hazards and carry out the appropriate preventative and corrective actions to prevent incidents or injuries arising from these hazards.

PTI establishes Due Diligence by including the following criteria:

- Have in place written safety and health policies, practices, and procedures. These would demonstrate and document that PTI carried out workplace safety audits, identified hazardous practices and hazardous conditions and made the necessary changes to correct these conditions, and provided employees with information to enable them to work safely.
- Provide the appropriate training and education to the employees so that they understand and carry out their work according to the established policies, practices, and procedures.
- Train the supervisors to ensure they are competent persons, as defined in the Act.
- Monitor the workplace and ensure that employees are following the policies, practices and procedures.
- Hold employees accountable to take reasonable care to ensure the safety of themselves and their coworkers through written documentation of progressive discipline for breaches of safety as applicable.

6. **Worker Rights**

Employees have the right to know, right to participate, right to refuse, and right to be in the workplace without being subject to a discriminatory action. The parameters of these rights and the process for exercising these rights are outlined in the Workplace Safety and Health Act and Regulations.

Right to Know

Know about hazards in the workplace and which precautions must be taken to prevent injury or illness from these hazards (ie. WHMIS education).

Right to Participate

Employees have the right to participate in safety and health activities at the workplace, including involvement in the joint workplace safety and health committee or by voicing concerns or suggestions for safety improvements.

Right to Refuse Process

Employees have the right to refuse work for anything that they believe is a danger to their safety and health or the safety and health of others that could cause immediate and serious, or long-term effects.

Right to Work Without Being Subject to Discriminatory Action

No employee may be discriminated against for:

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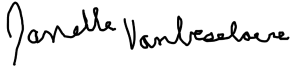
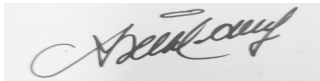
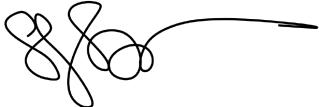
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- exercising a right under or carrying out a duty in accordance with the Act or the regulations;
- testifying in a proceeding under the Act;
- giving information about workplace conditions affecting the safety, health or welfare of any worker
- you have the right to refuse to work if you have reasonable cause to believe that: the work constitutes a danger to your safety or health or to the safety or health of another worker or another person

7. References

- The Manitoba Workplace Safety and Health Act, Chapter W210 10/02
- The Manitoba Workplace Safety and Health Regulations, 217/2006
- The Occupational Health and Safety Act, 1993
- The Occupational Health and Safety Regulations, 1996

8. Approval List

Responsibility Center:	Prepared by: Date: February 11, 2021 Janelle Vanbeselaere 	Issued by ISO Coord: Date: Luisa Gaitan 
Accepted for Quality: Date: Arlayne Jutiz 	Accepted for HR : Date: February 11. 2021 Stephanie Jacobs-Lockhart 	<i>Intentionally left blank</i>

9. Revision History:

Revision no.	Revised by	Date	Description of Revision
0	Nidia Jones	January 14, 2021	Initial Release

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