Cedar Point II Limited Partnership
c/o Suncor Energy Products Inc.
P.O. Box 2844
150 – 6th Avenue S.W.
Calgary, AB T2P 3E3
Tel 403-296-8000
Fax 403-296-3030
www.suncor.com

July 16, 2015

Ministry of the Environment and Climate Change
Environmental Assessments and Approvals Branch
2 St. Clair Avenue West, Floor 12A
Toronto, ON
M4V 1L5

VIA COURIER AND EMAIL

Attention: Mohsen Keyvani, Director

Re: Request for Amendment to REA number 6914-9L5JBB Spare Transformer

Suncor Energy Products Inc. (SEPI) received a Renewable Energy Approval number 6914-9L5JBB (REA) on August 22, 2014 for the Cedar Point Wind Power Project (Project). On February 25, 2015 notice was provided to the Director in accordance with the REA that the Project title and assets were assigned to Cedar Point II Limited Partnership (CP II LP). On July 14, 2015, SEPI filed REA amendment application materials to amend the name of the permit holder from SEPI to CP II LP. CP II LP submits this letter and included REA amendment application in **Attachment A** requesting the following amendment to the REA:

- Amending the REA to remove all references to MVA ratings associated with the single transformer proposed for the project.

Discussion

CP II LP has sourced a spare transformer which is to be used as a backup in the event of a failure of the original primary transformer proposed for the Project. The spare has been obtained to reduce the down time that would normally occur to procure and manufacture a replacement transformer. As a result throughout the life of the Project, CP II LP is seeking the ability for the REA to permit the use of either the primary or the spare transformer at the coordinate specified for TS1 in Schedule B of the REA.

The spare transformer obtained is manufactured by Prolec GE Engineering Power Division (Prolec GE). The MVA ratings of the transformer are 102/136/170 MVA, and as more power is transformed by the unit, additional cooling equipment is activated which affects sound power level. This specific unit has radiators that cool by natural convection (ONAN), a 1st stage forced air cooling (ONAF1) and 2nd stage forced air cooling (ONAF2). Prolec GE has confirmed that when the spare transformer is operated at the Project, the 2nd stage cooling fans will not be activated regardless of environmental conditions. Please refer to the Prolec GE letter dated July 15, 2015 regarding transformers (serial number G2994-02) use at the Project in **Attachment B**. In addition, Prolec GE has indicated that fans can be removed without affecting the manufacturer's warranty. CP II LP commits to physically disabling the 2nd stage cooling fans.

ONAN – oil filled natural cooling
ONAF1 – oil-filled forced-air cooling stage 1
ONAF2 – oil-filled forced-air cooling stage 2

Sound Power Levels

CP II LP retained HGC Engineering (HGC) to assess the sound power levels of the spare and primary transformer. HGC has identified that the spare transformer, when operated at the Project, will have an overall sound power level of 103.3 dBA which is below the overall sound power level of the primary transformer currently represented in Table B1 and B2 within Schedule B of the REA. The HGC letter memo is provided in **Attachment C**. CP II LP confirms that the sound wall will be constructed as specified in Schedule C of the REA prior to commercial operation of the Project. This confirms that the operation of the spare transformer at the Project will not result in increased negative environmental effects.

Oil Containment System

An oil containment system has been designed within the substation which can detect the presence of oil and prevent the discharge of water from the containment system. The design volume of the oil containment system is 55,140 L. The volume of oil contained in the spare transformer is 53,400 liters and is absent of poly-chlorinated biphenyl (PCB) content. The oil containment system is appropriately sized to contain the total volume of oil from the transformer in the event of a leak. Please refer to the drawing of the oil containment system, the spare transformer nameplate drawing, and oil test report for the spare transformer in **Attachment D**. No modifications are required to the conditions of section *K – Sewage Works of the Transformer Substation Spill Containment* of the REA as no increased negative environmental effects are anticipated due to the operation of the spare transformer at the Project.

REA Amendment Requested

The REA 6914-9L5JBB issued on August 22, 2014 contains various references to a "110 MVA" transformer which limits the use of the spare transformer at the site. CP II LP respectfully requests that the REA text be amended to remove any reference to an MVA rating of the transformer.

"110 MVA" would need to be removed in the following locations of the REA:

- Schedule A b) delete "110 mega-volt-ampere (MVA)";
- Schedule B Table B1 line item TS1 delete "110 MVA" in the source description; and
- Schedule B Table B2 title remove "110 MVA".

If you require any further details please do not hesitate to contact me.

Yours truly,

Christopher Scott
Senior Engineer – Renewable Energy
as Project Technical Information Contact, on behalf of,
Cedar Point II Limited Partnership

Cc: Nick Colella – Ministry of the Environment and Climate Change
District Manager – Sarnia/Windsor District, Ministry of the Environment and Climate Change

Attachment B

Prolec GE Letter

PROLEC GE S. de R.L. de C.V. ISO 9001 CERTIFIED
Blvd. Carlos Salinas de Gortari Km. 9.25
Apodaca, Nuevo León, México
CP .- 66600

July 15, 2015

Subject: Transformer serial number G2994-02 used at the 100 MW Cedar Point II project.

To: Jennifer Herron
NextEra Energy, Inc.
700 Universe Boulevard
Juno Beach, FL 33408

We have been informed that the GE Prolec transformer serial number G2994-02 might be used at the 100 MW Cedar Point II project, which we understand translates into a maximum transformer load of 111MVA.

Since this transformer is designed for 170 MVA, it has a cooling capacity far beyond what will be used at this project. GE Prolec confirms that when operated at 111 MVA at the Cedar Point II project, the second stage cooling fans will not be activated regardless of environmental conditions.

However, we understand that because of the differences in layout of the radiators and fans on G2994-02 GE Prolec transformer from the originally planned unit, the second stage cooling equipment will be removed to allow a proper fit into the Cedar Point II substation, and the transformer's design will provide adequate cooling without this equipment installed. In addition, the transformer's warranty will be unaffected by removal of the second stage cooling equipment.

Sincerely yours.

Manuel Resendiz Boone
Commercial Manager - Power Transformers
Prolec GE Industrias S. de R.L. de C.V.
Tel + 52 (81) 8030-2292
E-Mail: Manuel.Resendiz@ge.com

Attachment C

HGC Engineering Memo – Spare Transformer

HGC ENGINEERING

Howe Gastmeier Chapnik Limited
2000 Argentia Road, Plaza One, Suite 203
Mississauga, Ontario, Canada L5N 1P7
t: 905.826.4044

July 15, 2015

cscott@suncor.com

Chris Scott
Suncor Energy Products Inc.
150 6th Avenue SW
Calgary, Alberta
T2P 3E3

Re: Transformer Sound Levels
Suncor Cedar Point Wind Energy Project, Lambton County, Ontario

Dear Mr. Scott,

As requested, HGC Engineering has reviewed details regarding the spare transformer proposed for the Cedar Point Wind Energy Project.

The original transformer proposed for the site is a General Electric 66/88/110 MVA transformer with a maximum sound power level of 103.6 dBA included the +5 dBA tonality penalty. Details of this transformer are included under the Noise Assessment Report, dated May 20, 2014, prepared by HGC Engineering.

The proposed spare transformer is a General Electric 102/136/170 MVA transformer which will have a maximum NEMA sound level of 74 dB (ONAF 1) measured in accordance with IEEE Standard C57.12.90, "IEEE Standard Test Code for Liquid Immersed Distribution, Power and Regulating Transformers". Using the drawings for the transformer, an enclosing surface area estimate of 268 m^2 was determined. The NEMA sound rating and the measurement surface area was used to compute the overall maximum sound power level of 103.3 dBA including the +5 dBA tonality penalty, which is less than the original proposed transformer. Calculation details are attached.

We trust this meets your requirements.

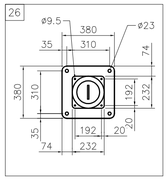
Yours truly,
Howe Gastmeier Chapnik Limited

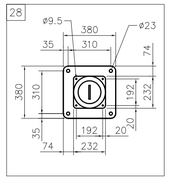
Ian Bonsma, PEng
Senior Engineer, Associate

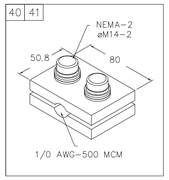
Transformer - Cedar Point, Prolec 102 / 136 / 170 MVA

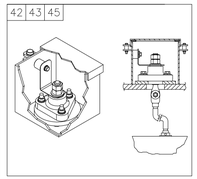
1 Ft ONAN / 6 Ft ONAF LwA	Lp	NEMA Surface S		Lw = Lp + 10*log S	
98.3	**74**	**268**	m^2	Total Perimeter:	36.9
				Height:	4.6
				Top Surface:	99.7

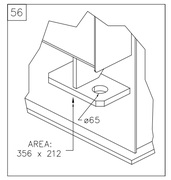
	31.5	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**A**
Adjustment Value	-3	3	5	0	0	-6	-11	-16	-23	
Sound Power Level	95.3	101.3	103.3	98.3	98.3	92.3	87.3	82.3	75.3	**98.3**
									Tonal Penalty:	5
									Penalized A-Weighted Sum:	103.3

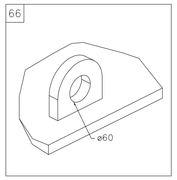


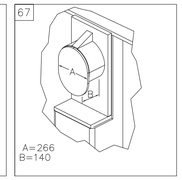


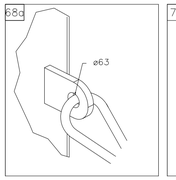


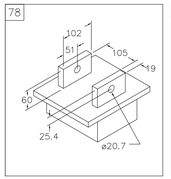


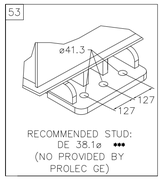


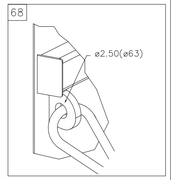












GUIDE		QTY.	ITEM	DESCRIPTION	CAT./MOD.
		1	1d	LIQUID TEMPERATURE INDICATOR (26Q-1)	QUALITROL, 104-685-03
		1	2d	THERMO-WELL FOR LIQUID TEMPERATURE INDICATOR	
5.4	•	2	4	PRESSURE RELIEF DEVICE WITH SEMAPHORE (63PR-1,2)	QUALITROL, 208-60F
5.6	•	1	5	RAPID PRESSURE RELAY (OIL) (63P-1)	QUALITROL, 900-003-02
		1	5b	RAPID PRESSURE RELAY VALVE (2.00 ø) BALL-TYPE	
		1	7	THERMO-WELL FOR RESISTANCE TEMPERATURE DEVICE FOR ETM (TOP)	
		1	10	ELECTRONIC TEMPERATURE MONITOR (INSIDE CONTROL CABINET)	APT, ECLIPSE-000H
		1	10a	RESISTANCE TEMPERATURE DEVICE FOR ETM (TOP OIL) RTD-1	
		1	10c	RESISTANCE TEMPERATURE DEVICE FOR ETM (AMBIENT) RTD-2	
		1	11	PRESSURE-VACUUM GAUGE FOR SHIPPING	QUALITROL, 050-35E
5.15	•	3	14	H.V. BUSHING EXTERNAL CONNECTOR	DELTA, PM59C12-1-4N4-E
5.15	•	3	14a	L.V. BUSHING EXTERNAL CONNECTOR	DELTA, PM60C12-1-422-M1-E
5.15	•	1	14d	NEUTRAL BUSHING HO EXTERNAL CONNECTOR	BURNDY, FD67C12W
3.2	•	3	15	H.V. BUSHING	PCORE, POC650G1216CMS
3.2	•	3	16	L.V. BUSHING	ABB 0342300045
3.2	•	1	19	NEUTRAL BUSHING HO	ABB 0342041ZUT
4.2	•	3	25	H.V. SURGE-ARRESTERS	SIEMENS, 3EQ4 108-2PK31-4NH5
	•	3	25a	H.V. BUSHING TO SURGE-ARRESTER FLEXIBLE CONNECTOR	
4.1	•	1	26	H.V. SURGE-ARRESTER SUPPORT	
4.2	•	3	27	L.V. SURGE-ARRESTER	SIEMENS 3EQ4 045-2PD31-4NH5
	•	3	27a	L.V. BUSHING TO SURGE-ARRESTER FLEXIBLE CONNECTOR	
4.1	•	1	28	L.V. SURGE-ARRESTER SUPPORT	
		1	37	H.V. SURGE-ARRESTERS GROUND CABLE CONNECTOR	
		1	37a	L.V. SURGE-ARRESTERS GROUND CABLE CONNECTOR	
	•	1	38	H.V. SURGE-ARRESTERS COPPER GROUND CABLE	
	•	1	38a	L.V. SURGE-ARRESTERS COPPER GROUND CABLE	
		5	40	GROUND PAD	
		1	41	NEUTRAL HO GROUND PAD	
		1	42	CORE GROUND BUSHING TERMINAL BOX (MAIN UNIT)	
		1	43	FRAME GROUND BUSHING BOX	
		1	45	CORE GROUND BUSHING BOX (SERIES UNIT)	
		1	46	NAMEPLATE	
		7	46b	IDENTIFICATION NAMEPLATE	
		1	47	CONTROL CABINET	
		1	51	REINFORCED BASE WELDED TO TANK	
		4	53	TRANSFORMER ANCHOR PADS	
		13	55	TANK BRACES	
		4	55a	COVER BRACES	
		4	56	JACKING PADS AND PULLING EYES	
		1	57	MAIN COVER	
		3	58	INSPECTION MANHOLE (COVER)	
		2	60	INSPECTION RECTANGULAR MANHOLE (COVER)	
		3	65	CT TERMINAL BOX	
		4	66	LIFTING EYE COVER ONLY	
		4	67	LIFTING HOOK FOR LIFTING COMPLETE UNIT	
		4	68	SHIPPING LUGS FOR SECURING THE UNIT LONGITUDINALLY (SHORT LUGS)	
		4	68a	SHIPPING LUGS FOR SECURING THE UNIT LONGITUDINALLY (LONG LUGS)	
		1	72c	TOP FILTER PRESS VALVE (50.8 ø) GLOBE-TYPE	
		1	73	MAIN TANK DRAIN VALVE (50.8ø) GLOBE-TYPE WITH SAMPLING DEVICE (9.65) AND PLUG	
		1	74	IMPACT RECORDER FOR SHIPPING	
		1	74a	ELECTRONIC IMPACT RECORDER FOR SHIPPING	
1.3	•	12	75	COOLING RADIATORS	
		24	75b	RADIATOR VENT AND DRAIN PLUG (25.4 ø)	
		24	75c	RADIATOR VALVE BUTTERFLY-TYPE (101.6 ø)	
	•	20	75h	COOLING FAN	KRENZ, F260-A9712
1.4	•	4	75n	TOP/BOTTOM RADIATOR SUPPORTS	
1.2	•	7	75q	RADIATOR BRACE	
2.3	•	1	76	**CONSERVATOR TANK WITH INTERNAL BLADDER**	
2.1	•	1	76a	**CONSERVATOR TANK SUPPORT**	QUALITROL, 042-144-07
2.2	•	1	76b	**CONSERVATOR MAGNETIC LIQUID LEVEL GAUGE (71Q-1)**	
		1	76c	**HANDHOLE TO INSTALL BLADDER**	
5.8	•	1	76d	**SILICA-GEL BREATHER WITH PIPE**	MESSKO, DB200-RM-T
		2	76e	**CONSERVATOR MANHOLE**	
5.8	•	1	76f	**SILICA-GEL SHUT OFF VALVE (12.7 ø) BALL-TYPE**	
		1	76g	**CONSERVATOR PRESSURE EQUALIZATION VALVE (25.4 ø) GLOBE-TYPE**	
		1	76h	**CONSERVATOR FILL VALVE (50.8 ø) GLOBE-TYPE**	
		1	76i	**CONSERVATOR DRAIN VALVE (50.8 ø) GLOBE-TYPE**	
		1	76j	**CONSERVATOR TANK NIPPLE FOR VENT WITH CAP.**	
2.2	•	1	76k	**CONSERVATOR TANK TO MAIN TANK VALVE (76.2 ø) BALL-TYPE**	
		1	76l	**GAS SAMPLING DEVICE**	QUALITROL, 038-002-02
5.13	•	1	76n	**GAS ACCUMULATION DEVICE (63Q-1)**	
2.4	•	1	76p	**EXPANSION JOINT FOR PIPING**	
		1	77	ON-LOAD TAP-CHANGER	MR, RMV-II-1500-72.5
		1	77a	LTC MAGNETIC LIQUID LEVEL GAUGE (71Q-2)	
		1	77b	LTC PRESSURE RELIEF DEVICE (63PR-4)	
5.8	•	1	77i	LTC DRAIN VALVE (25.4 ø) GATE-TYPE WITH SAMPLING DEVICE (9.65 ø) AND PLUG	
		1	77k	LTC SILICA-GEL BREATHER WITH PIPE	
		1	77l	LTC MOTOR DRIVE CABINET	
		1	77u	LTC PRESSURE-VACUUM GAUGE FOR SHIPPING	
		1	78	TETHER POLE MOUNTING PLATE	
		2	79	VALVES FOR INSTALLATION OF A KELMAN MINITRANS DGA MONITOR (BALL TYPE)	

NOTES:

a) ITEMS REMOVED FOR SHIPMENT ARE MARKED WITH (•).

b) NUMBERING IS ACCORDING WITH G.E. PROLEC STD. LIST.

c) THE NUMBER IN COLUMN "GUIDE" CORRESPONDS TO THE "IN-FIELD ASSEMBLY GUIDE"

OPERATION CENTER OF GRAVITY

SHIPPING CENTER OF GRAVITY

TOLERANCES		
Centerline distance of not inclined bushings		±.25 [±6]
Centerline distance of inclined bushings	0-40	+.50 -1.25 [+12 -32]
	40-60	+.75 -1.25 [+19 -32]
Bushings height (distance to floor)		±.50 [±12]
Outlet of control cabinet distance		±.25 [±6]
Hv & Lv bushings center line		±.25 [±6]
Bushings & surge arrester center line		±.25 [±6]
Surge arrester height (distance to floor)		±.50 [±12]
Center tank distance to short side		±.50 [±12]
Center tank distance to large side		±.50 [±12]
Anchoring width		±.50 [±12]
Anchoring center line		±.13 [±3]
Bracing base center line		±.13 [±3]
Pattern distance	+ .06	+1
	- .18	-4
Outline	0-118.00 [0-3000]	±1.00 [±25]
Dimensions	118.00-197.00 [3000-5000]	±1.50 [±40]
	197.00 & Above [5000 & Above]	±2.00 [±50]

GENERAL ELECTRIC CANADA	
PROLEC GE Serial No:	G2994-02
P.O. No:	512-03799
GE Req No:	TD704723
M & S No:	49M221102
Substation:	JERICHO

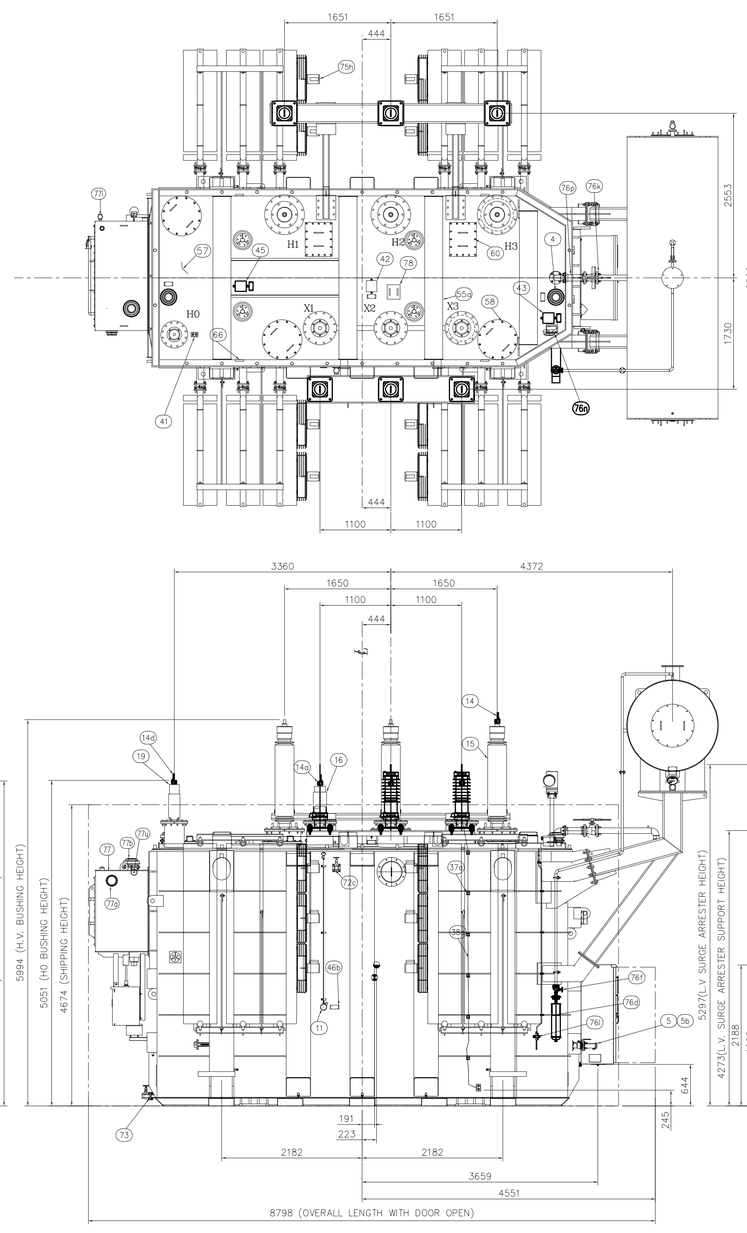
STEP UP TRANSFORMER
ONAN/ONAF/ONAF
102/136/170 MVA
60 HZ. THREE PHASE, 65°C, 1000 MASL
121/69.86 KV Y – 34.5 KV Δ

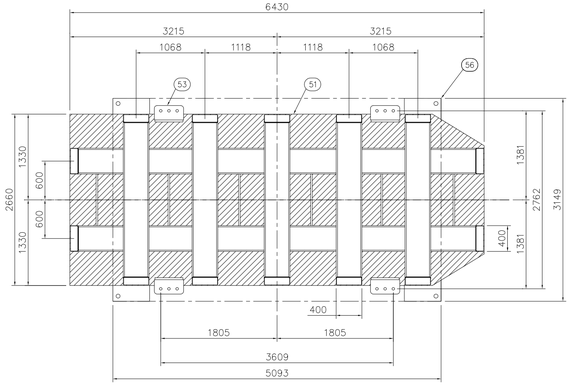
PROLEC

APPROVAL DRAWING
OCT/18/2013

DEAR CUSTOMER :
WE WANT TO SERVE YOU BETTER. PLEASE REVIEW THIS DRAWING AND SEND BACK WITH YOUR COMMENTS TO PROLEC-GE IN THE TIMEFRAME OF 10 DAYS. AFTER THE DATE MARKED IN THIS STAMP.

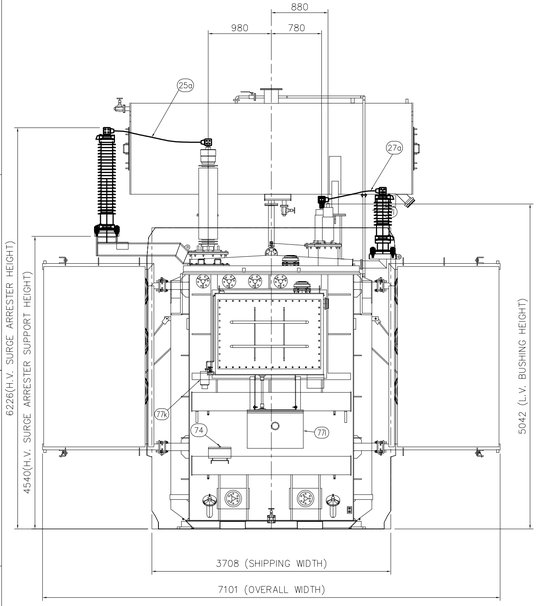
APPROXIMATE WEIGHTS (KGS)	
CORE AND COILS	94780
TANK AND FITTINGS	40330
MAIN TANK INSULATING LIQUID (45730 LTS)	41160
COOLING EQUIPMENT INSULATING LIQUID (4015 LTS)	3615
CONSERVATOR TANK INSULATING LIQUID (2355 LTS)	2120
LTC TANK INSULATING LIQUID (1300 LTS)	1170
TOTAL WEIGHT	183175
UNTANKING WEIGHT (HEAVIEST PIECE)	94780
SHIPPING WEIGHT (WITHOUT INSULATING LIQUID)	116240

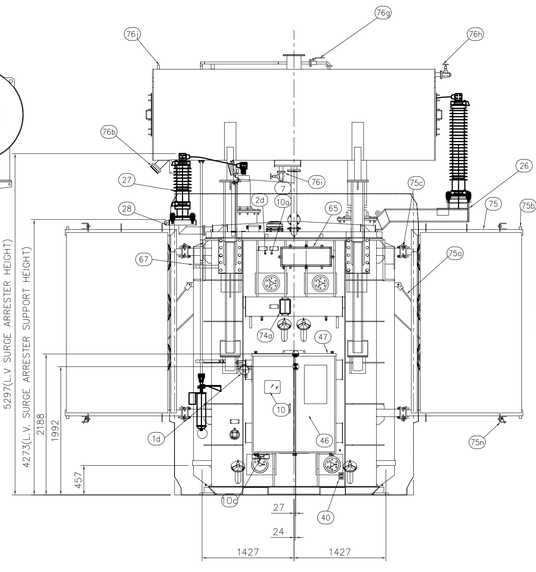


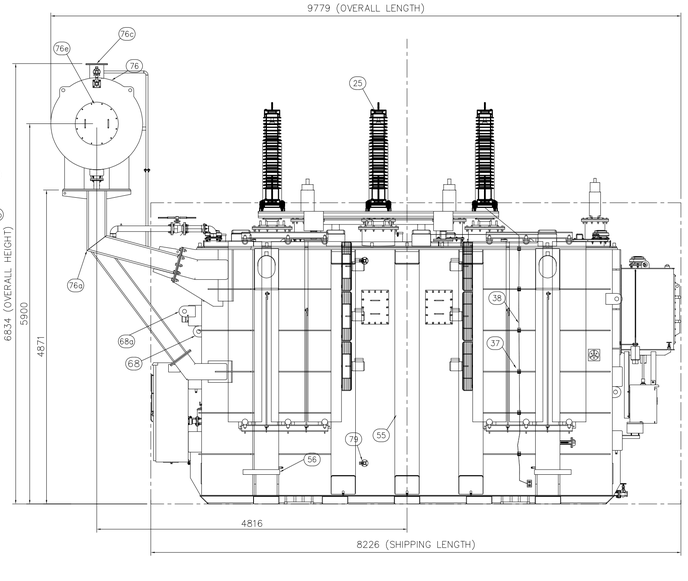


SECTION A – A

* THE HATCHED AREA REPRESENT THE BOTTOM OF THE TRANSFORMER, THIS AREA IS NOT IN CONTACT WITH FOUNDATION OR PAD







REV.	DESCRIPTION	DESIGN GROUP	2

PROLEC

THIS DRAWING CONTAINS PROPRIETARY INFORMATION WHICH CAN NOT BE REPRODUCED WITHOUT PERMISSION OF PROLEC GE.

PROLEC GE ENGINEERING POWER DIVISION
http://www.prolecge.com

TITLE: TRANSFORMER'S OUTLINE

DFTM: 10.18.2013	R.DL.C.
CHKD: 10.18.2013	AGS

PROJECTION	
SCALE:	1:45
DIMENSIONS:	MM
REVISION:	INDICATED
DRAWING NO.:	G299402D801
	sheet: 1 of 1

D-PAGES PROLEC

Date: Mar/07/2015

TRANSFORMER
TEST REPORT

102.000 / 136.000 / 170.000 MVA

121.00Y-34.50 kV

ONAN / ONAF / ONAF2

Serial No: **G2994-02**

Purchaser: **GENERAL ELECTRIC CANADA**

Test Engineer	Moisés Rodríguez C. Test Leader	Design Engineer

Purchaser : GENERAL ELECTRIC CANADA
Rating : 102.000/136.000/170.000 MVA

Serial No:G2994-02
Date :03/07/2015

AUDIBLE SOUND LEVEL
MEASUREMENTS (dB)

RATING : **ONAF1**
H.V. TAP POSITION : NOM
L. V. TAP POSITION : NOM

TEST VOLTAGE : 34500 V

1. Before test meas.	
Side	**Ambient**
A	65.2
B	66.0
C	65.7
D	66.4

3.- After test meas.	
Side	**Ambient**
A	65.1
B	65.4
C	64.2
D	64.6

4.- Average Ambient
65.0

6.- Average Corrected
70.0

Pos.	2.- Ambient + Transformer meas. 1/3 Height	2/3 Height	5.- Corrected Transformer meas. 1/3 Height	2/3 Height
1	71.2	71.6	69.9	70.6
2	70.6	70.9	69.3	69.6
3	70.4	71.4	68.8	70.1
4	71.2	71.7	69.9	70.7
5	71.6	70.9	70.6	69.6
6	70.3	71.6	68.7	70.6
7	70.1	71.4	68.5	70.1
8	69.9	70.9	68.3	69.6
9	70.6	71.2	69.3	69.9
10	71.2	70.6	69.9	69.3
11	71.9	70.8	70.9	69.5
12	70.9	71.3	69.6	70.0
13	71.6	71.2	70.6	69.9
14	71.4	70.7	70.1	69.4
15	71.3	71.7	70.0	70.7
16	71.2	72.1	69.9	71.1
17	70.3	72.3	68.7	71.3
18	69.9	70.6	68.3	69.3
19	70.6	71.4	69.3	70.1
20	71.2	71.1	69.9	69.8
21	69.9	70.7	68.3	69.4

Guaranteed Level 74 dB

Average transformer sound pressure level at ANSI surface (Lp)	70.0	db(A)
Height of the Transformer tank (H)	4.0	m
Length of the prescribed contour (Pm)	39.5	m
Measurement Surface Area (S)	198	m
Sound Power Level (Lw)	93.0	db(A)

Results : Accepted

COMMENTS :

Test Engineer

Design Engineer

TEST REPORT

Purchaser : GENERAL ELECTRIC CANADA
Rating : 102.000/136.000/170.000 MVA

Serial No:G2994-02
Date :03/07/2015

AUDIBLE SOUND LEVEL
MEASUREMENTS (dB)

RATING : **ONAF1**
H.V. TAP POSITION : NOM
L. V. TAP POSITION : NOM

TEST VOLTAGE : 34500 V

1. Before test meas.	
Side	**Ambient**
A	65.2
B	66.0
C	65.7
D	66.4

3.- After test meas.	
Side	**Ambient**
A	65.1
B	65.4
C	64.2
D	64.6

4.- Average Ambient
65.0

6.- Average Corrected
70.0

Pos.	2.- Ambient + Transformer meas. 1/3 Height	2/3 Height	5.- Corrected Transformer meas. 1/3 Height	2/3 Height
22	71.0	71.8	69.7	70.8
23	70.3	71.3	68.7	70.0
24	70.2	70.9	68.6	69.6
25	71.4	70.6	70.1	69.3
26	70.6	71.6	69.3	70.6
27	71.4	70.9	70.1	69.6
28	70.6	70.8	69.3	69.5
29	71.4	70.6	70.1	69.3
30	71.2	71.6	69.9	70.6
31	70.4	70.9	68.8	69.6
32	71.4	71.4	70.1	70.1
33	71.0	71.7	69.7	70.7
34	70.6	71.2	69.3	69.9
35	71.3	70.6	70.0	69.3
36	70.9	71.3	69.6	70.0
37	70.6	71.7	69.3	70.7
38	71.2	70.9	69.9	69.6
39	71.4	71.6	70.1	70.6
40	71.6	71.9	70.6	70.9

Guaranteed Level 74 dB

Average transformer sound pressure level at ANSI surface (Lp)	70.0	db(A)
Height of the Transformer tank (H)	4.0	m
Length of the prescribed contour (Pm)	39.5	m
Measurement Surface Area (S)	198	m
Sound Power Level (Lw)	93.0	db(A)

Results : Accepted

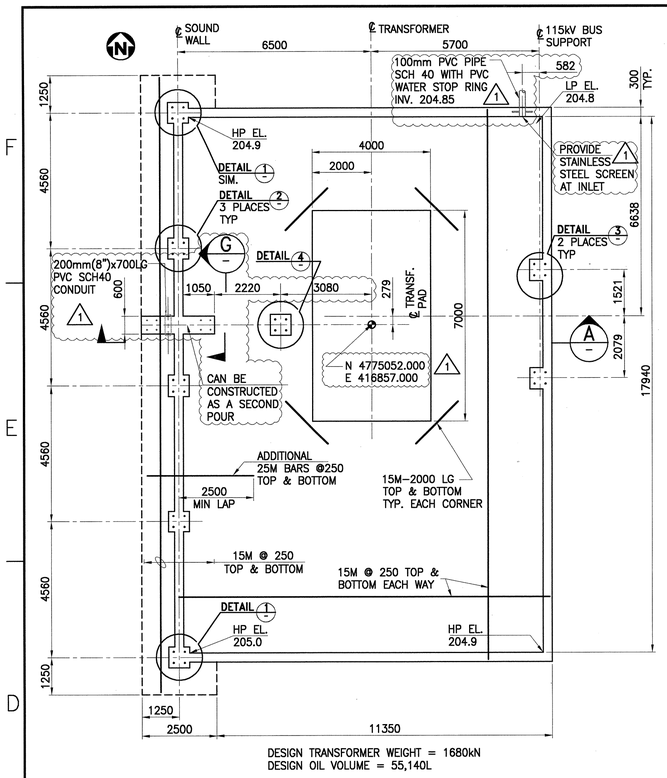
COMMENTS :

Test Engineer

Design Engineer

Attachment D

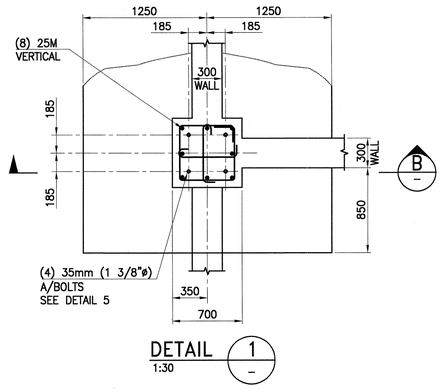
Oil Containment System Design Drawing, Prolec GE Nameplate Drawings and Oil Testing Results



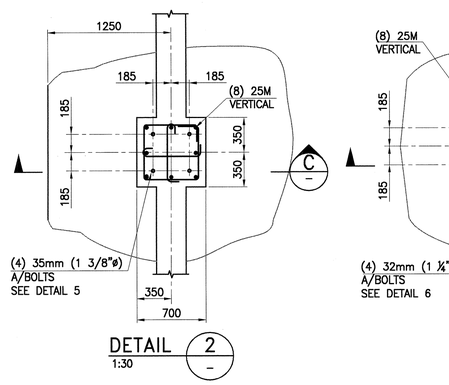
DESIGN TRANSFORMER WEIGHT = 1680kN
DESIGN OIL VOLUME = 55,140L

F1 – TRANSFORMER CONTAINMENT PIT – PLAN

SCALE 1:100 (DD20-DTL-0161)



DETAIL 1 (1:30)



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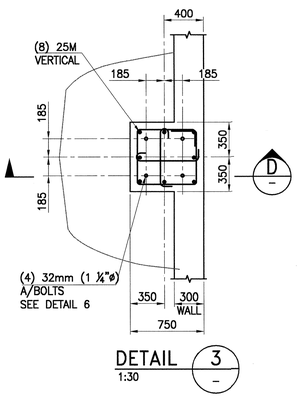
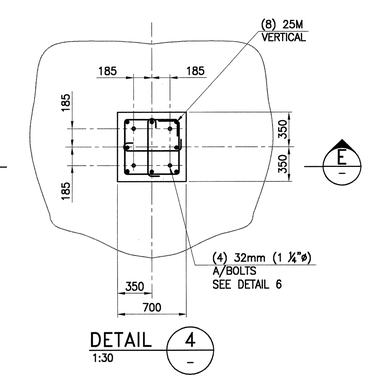
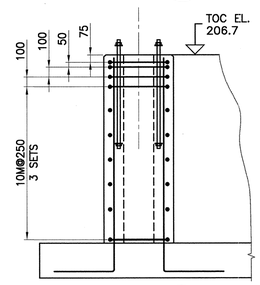


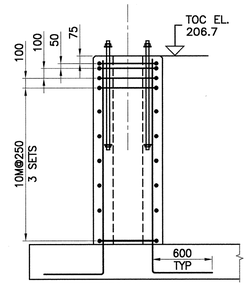
DETAIL 3 (1:30)



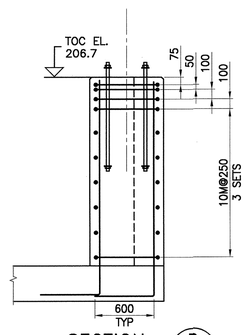
DETAIL 4 (1:30)



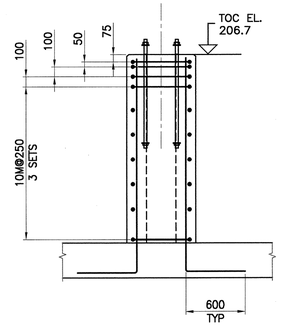
SECTION B (1:30)



SECTION C (1:30)



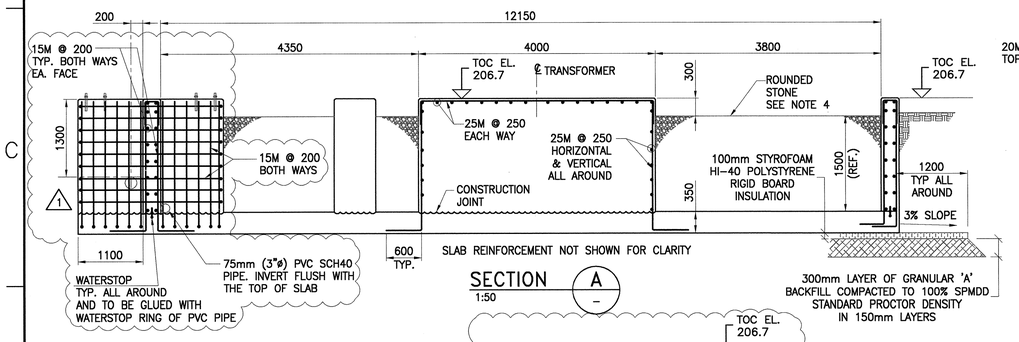
SECTION D (1:30)



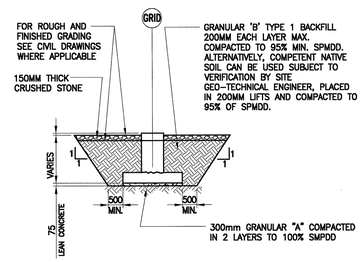
SECTION E (1:30)

NOTES:

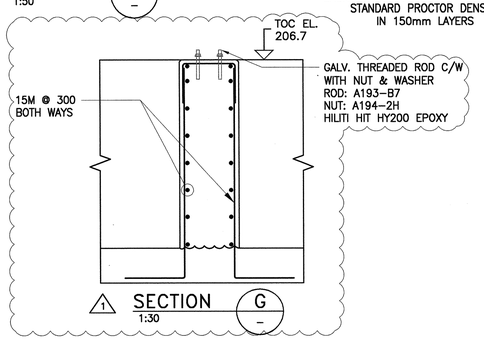
1. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL ELEVATIONS ARE IN METERS.
2. FOR FOUNDATION PLAN SEE AMEC DWG. DD20– LYD–0161.001.
3. FOR GENERAL NOTES SEE AMEC DWG. DD20–DTL–0160.001
4. OIL CONTAINMENT AREA FILLED WITH "VOID STONE" COMPLYING WITH THE FOLLOWING:
   - VOID STONE CONSISTS OF WASHED ROUNDED GRAVEL UNIFORMLY GRADED TO 25mm (100% PASSING 38mm SIEVE, 0% PASSING 19mm SIEVE). MATERIAL CONSISTS OF CLEAN, HARD, DURABLE PARTICLES.
   - A MINIMUM OF 35% VOLUME OF VOIDS IS REQUIRED AND CONTRACTOR SUBMITTED CERTIFICATION OF THIS.
   - VOID STONE MEETS REQUIREMENTS OF ONTARIO PROVINCIAL STANDARD CERTIFICATION 1010 AND SHALL BE DURABLE AND FREE OF SHALE OR OTHER NON–DURABLE MATERIAL. ALTERNATIVE GRADATION CAN BE USED SUBJECT TO APPROVAL.
5. REFER TO CIVIL SITE GRADING PLAN DWG. 173709–0200–DD10–LYD–0128.002 FOR SUMP DETAILS.



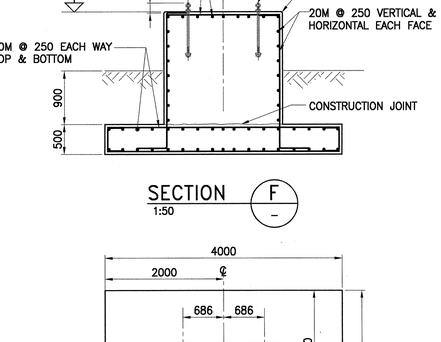
SECTION A (1:50)



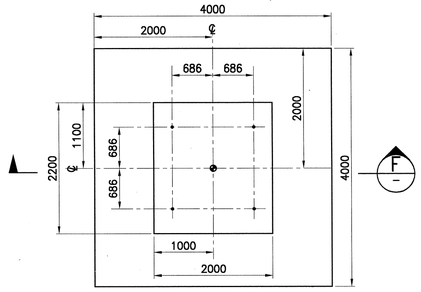
EARTHWORK TYPICAL SECTION (U.N.O)
1:100



SECTION G (1:30)

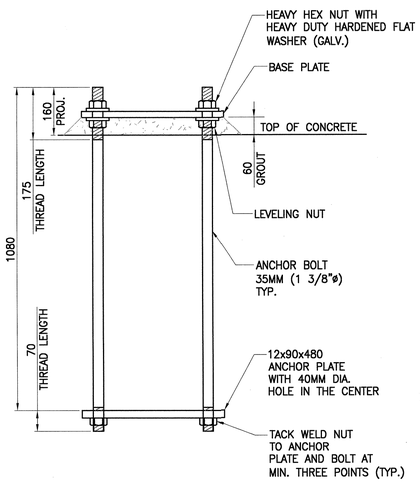


SECTION F (1:50)



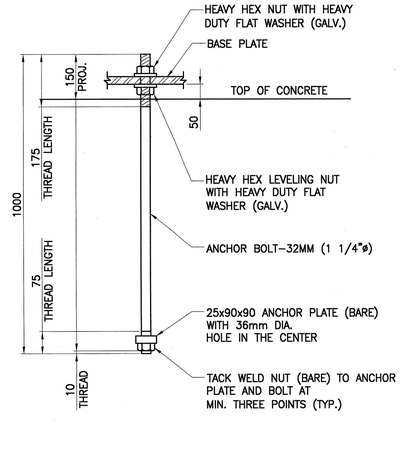
NOTE:
DESIGN WEIGHT OF CIRCUIT BREAKER – 33kN

F2 – CIRCUIT BREAKER FOUNDATION – PLAN
1:50 (DD20–LYD–0161)



TOP 250MM OF ANCHOR BOLT TO BE GALVANIZED

DETAIL 5 (1:10)



TOP 250MM OF ANCHOR BOLT TO BE GALVANIZED

DETAIL 6 (1:10)

REV	DDMMMYY	REVISION / ISSUE DESCRIPTION	DRN	CHK	APP	APP	APP	APP
1	31MAR15	RE–ISSUED FOR CONSTRUCTION	MQ	IRC	KL	GA		
0	05MAR15	ISSUED FOR CONSTRUCTION	MQ	IRC	KL	GA		
E	26NOV14	RE–ISSUED FOR BID	MQ	SD	DH	GA		
D	20JUN14	ISSUED FOR BID	BA	SD	DH	GA		
C	20JUN14	ISSUED FOR REVIEW	BA	SD	DH	GA		
B	19JUN14	ISSUED FOR SQUAD CHECK	BA	SD	DH	GA		
A	10FEB14	ISSUED FOR INFORMATION	BA	DH	SD	MU		

REF	NUMBER	TITLE
5	DD20–DTL–0163	F3 TO F5 & F8 TO F12 – PLAN, SECTIONS AND DETAILS
4	DD20–DTL–0161	SUBSTATION FOUNDATIONS LAYOUT – PLAN
3	DD20–LYD–0160	GENERAL NOTES
2	DF00–LYD–0006	SUBSTATION GROUNDING LAYOUT
1	DF00–LYD–0004	SUBSTATION LAYOUT – PLAN

REFERENCES

STAMP/SEAL

LICENSED PROFESSIONAL ENGINEER
C. H. LIN
100151402
MAR 31, 2015
PROVINCE OF ONTARIO

PROJECT NO.	ACTIVITY NO.
173709	
SCALE	PACKAGE CODE
AS NOTED	

	BY	DDMMMYY
DES	DH	28JAN14
DRN	BA	28JAN14
CHK	SD	28JAN14
APP	MU	28JAN14

SUBJECT
CEDAR POINT II SUBSTATION FOUNDATIONS F1 & F2 PLANS, SECTIONS & DETAILS

AREA 0200
SUNCOR ENERGY
CEDAR POINT II WIND POWER PROJECT
CLIENT DWG. NO.
DRAWING NO. 173709–0200–DD20–DTL–0162.001
REV. 1

SAVED: 31–Mar–15 10:51 AM PLOTTED: 31–Mar–15 10:55 AM USER: QASSIM, MAY

CAD FILE: P:\CAD\STR\173709–0200–DD20–DTL–0162.001.DWG

ISO A1–594x841

STEP UP TRANSFORMER
ONAN/ONAF/ONAF
102/136/170 MVA
60 HZ. THREE PHASE, 65°C, 1000 MASL
121/69.86 KV Y - 34.5 KV Δ

GENERAL ELECTRIC CANADA	
PROLEC GE Serial No:	G2994-02
P.O. No:	512-03799
GE Req No:	TD704723
M & S No:	49M221102
Substation:	JERICHO

APPROVAL DRAWING
OCT/18/2013
DEAR CUSTOMER : BETTER TO SERVE YOU. PLEASE REVIEW THIS DRAWING AND SEND BACK WITH YOUR COMMENTS TO PROLEC-GE IN THE TIMEFRAME OF 10 DAYS AFTER THE DATE MARKED IN THIS STAMP.

PROLEC GE http://www.prolecge.com

LOAD-TAP-CHANGING TRANSFORMER

SERIAL No G2994 __, THREE-PHASE, 60 Hz, ALTITUDE 1000 m

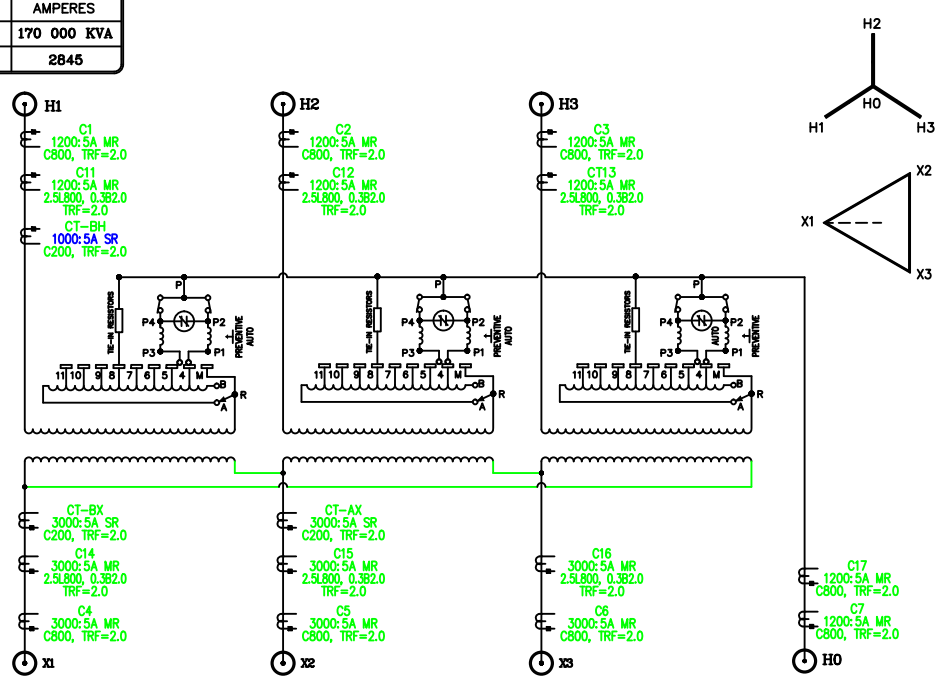
VOLTAGE RATING 121 000 GrdY / 69860 - 34 500			
COOLING CLASS	MVA RATING	AMBIENT TEMPERATURE	SERVICE CONDITIONS
ONAN	102.0	30°C	CONTINUOUS @ 65°C RISE
ONAF	136.0		
	170.0		
	208.0	0°C	CONTINUOUS

IMPEDANCE @ 85°C		
%Z	MVA BASE	kV BASE
	102	121 - 34.5

LIGHTNING IMPULSE LEVEL (kV)			
	H1,H2,H3	X1,X2,X3	H0
BUSHING	650	200	200
WINDING	550	200	200

LOW VOLTAGE WINDING	
VOLTS	AMPERES
X1, X2, X3	170 000 KVA
34 500	2845

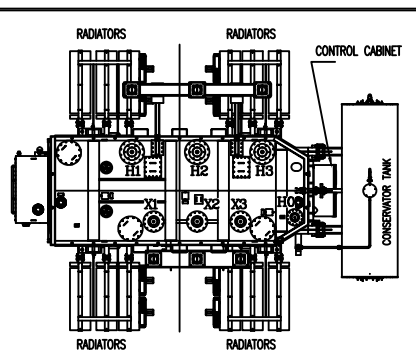
APPROXIMATE WEIGHTS (KGS)	
CORE AND COILS	94780
TANK AND FITTINGS	40330
MAIN TANK INSULATING LIQUID (45730 LTS)	41160
COOLING EQUIPMENT INSULATING LIQUID (4015 LTS)	3615
CONSERVATOR TANK INSULATING LIQUID (2355 LTS)	2120
LTC TANK INSULATING LIQUID (1300 LTS)	1170
TOTAL WEIGHT	183175
UNTANKING WEIGHT (HEAVIEST PIECE)	94780
SHIPPING WEIGHT (WITHOUT INSULATING LIQUID)	116240



CUSTOMER SERIAL No.

HIGH VOLTAGE WINDING

VOLTS	AMPERES	LOAD TAP CHANGER			
H1, H2, H3	170 000 kVA	DIAL POSITION		CONNECTS P4 TO	CONNECTS P1 TO	REVERSING SWITCH CONNECTS
133 100	737	LOWER	16L	4	4	R TO A
132 350	742		15L	5	4	
131 600	746		14L	5	5	
130 825	750		13L	6	5	
130 075	755		12L	6	6	
129 325	759		11L	7	6	
128 575	763		10L	7	7	
127 800	768		9L	8	7	
127 050	773		8L	8	8	
126 300	777		7L	9	8	
125 550	782		6L	9	9	
124 775	787		5L	10	9	
124 025	791		4L	10	10	
123 275	796		3L	11	10	
122 525	801		2L	11	11	
121 750	806		1L	M	11	
121 000	811		N	M	M	
120 250	816	RAISE	1R	4	M	R TO B
119 500	821		2R	4	4	
118 725	827		3R	5	4	
117 975	832		4R	5	5	
117 225	837		5R	6	5	
116 475	843		6R	6	6	
115 700	848		7R	7	6	
114 950	854		8R	7	7	
114 200	860		9R	8	7	
113 450	865		10R	8	8	
112 675	871		11R	9	8	
111 925	877		12R	9	9	
111 175	883		13R	10	9	
110 425	889		14R	10	10	
109 650	895		15R	11	10	
108 900	901		16R	11	11	



TRANSFORMER PLAIN VIEW

CAUTION !

1- BEFORE INSTALLING OR OPERATING READ INSTRUCTIONS G2994

2- DO NOT OPERATE TRANSFORMER WHEN THE READING OF LIQUID LEVEL GAUGE IS BELOW THE LOW POINT OF THE SCALE.

NOTES

1- MAXIMUM OPERATING PRESSURES OF LIQUID PRESERVATION SYSTEM: 0 KPa (ATMOSPHERIC PRESSURE).

2- TANK DESIGNED FOR 103.42 KPa VACUUM FILLING

3- ALL WINDINGS COPPER.

4- FILLED WITH INSULATING LIQUID WHICH CONTAIN NO DETECTABLE LEVEL OF PCB AT THE TIME OF MANUFACTURE.

5- LIFTING, MOVING AND JACKING FACILITIES MUST NOT BE USED IN AMBIENT TEMPERATURES LOWER THAN -40°C.

6- BUILT TO CAN/CSA C88-M90 STANDARD

0 CSA-C88-M90

SUITABLE FOR STEP UP OPERATION

MANUFACTURE DATE: ___/ 2 0___

MADE IN MEXICO

TRANSFORMER DESIGNED FOR NOMINAL IMPEDANCE VOLTS OF 8.0 % AT 102000 kVA THE ACTUAL MEASURED IMPEDANCE VALUE WILL BE SHOWN ON THE NAMEPLATE.

MATERIAL: STAINLESS STEEL PS
DIMENSIONS: 610 mm. x 305 mm.

REV	DESCRIPTION
DESIGN GROUP	2

PROLEC GE ENGINEERING POWER DIVISION
http://www.prolecge.com

TITLE: NAMEPLATE

DFTM: JEGL 02/12/2013
CHKD: AGS 02/12/2013

PROJECTION
SCALE: NONE
DIMENSIONS IN: NONE
REVISION: INDICATED

DRAWING NO.: G2994O2D802
SHEET: 1 of 1

TEST REPORT

Purchaser: GENERAL ELECTRIC CANADA
Serial No: G2994-02

Rating: 102.000/136.000/170.000 MVA
Date: 03/06/2015

INSULATING FLUID ANALYSIS
PCB's CONTENT IN OIL ANALYSIS

ANALYSIS TYPE: DETERMINATION OF PCB's CONTENT (AS AROCLOR 1260)

Temperature: 25 °C

RESULT (PPM)

QUANTITY	METHOD
NO DETECTED:	ASTMD-4059

Diagnostic: OIL ACCEPTED:

Equipment: HP5890 Serial 02

Form 10.15-A REV. 2

Approval

Material Inspector