Revised Inventory of Polychlorinated Biphenyls (PCBs) Sri Lanka-2015

Project on Enabling Activities to Review and Update the National Implementation Plan (NIP) of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Sri Lanka (GEF/UNIDO)

Ministry of Mahaweli Development & Environment, Sri Lanka
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J.K.A. Bandulasoma Wijegunasekara
National Expert for PCBs for NIP Project

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ACRONYMS AND ABBREVIATIONS

AGM	Additional General Manager
AGMDD	Additional General Manager Distribution Division
CEA	Central Environmental Authority
CEB	Ceylon Electricity Board
DRE	Destruction and Removal efficiency
GC	Gas chromatography
GCECD	Gas chromatography Electron Captured Detector
GEF	Global Environmental Facility
GWh	Gigawatt Hour
HCB	Hexachlorobenzene
HS Codes	Harmonized System Codes
ICL	Imports Control Licence
IDB	Industrial Development Board
IPP	Independent Power Producers
ITI	Industrial Technology Institute
kg	kilogramme
KVA	Kilo Volt
LECO	Lanka Electricity Company Limited
LTLT	LTL Transformers (Pvt) Limited
NIP	National Implementation Plan
PBB	Polybrominated biphenyl
PCB	Polychlorinated biphenyls
PCDD	Polychlorinated dibenzo-*p*-dioxins
PCDF	Polychlorinated Dibenzofurans
PCT	Polychlorinated tetraphenyl
POPs	Persistent Organic Pollutants
ppm	parts per million
UNEP	United Nations Environment Programme
AM & C	Asset Management & Corporate
B&OA	Business and Operation Strategy

EXECUTIVE SUMMARY

Sri Lanka became a signatory to the Stockholm Convention on Persistent Organic Pollutants (POPs) on 5th September, 2001 and ratified the Convention on 22nd December 2005. According to the article 7 of the Stockholm Convention, every party to the convention has to submit a National Implementation Plan (NIP) to the Convention Secretariat. The preliminary Inventory of Polychlorinated Biphenyls (PCBs) in Sri Lanka was published in June 2006 parallel to the initial NIP which was submitted to the Convention Secretariat by the Government of Sri Lanka in 2007.

The revised inventory of Polychlorinated Biphenyls (PCBs) in Sri Lanka 2015 is the update to the preliminary inventory of PCBs published in 2007 as an integral part of the updated National Implementation Plan (NIP) for the Stockholm Convention (SC) on Persistent Organic Pollutants (POPs) that addresses 22 Persistent Organic Pollutants (POPs) including first 12 POPs.

Ceylon Electricity Board (CEB) covers most of the electricity generation, transmission and distribution throughout the country. Lanka Electricity Company Ltd (LECO) covers fraction of the distribution system of the power sector. LTL Transformer (Pvt) Limited is the sole manufacture of transformers in Sri Lanka. These three agencies are considered as the main entities that deal directly with transformers and capacitors, which may be pure and contaminated with PCBs.

Total number of transformers connected to the national grid was 24009 units in 2015 (18356 units in 2005). 83.4% of transformers (20043 units) in the national grid belong to the CEB. One of the decision made based on available data during the preparation of initial inventory in 2006 is that transformers which were manufactured before 1986 may have high probability of PCBs transformer oils. However, sampling of transformer oil across different era of manufacture and testing using field test kits and laboratory analysis indicated that there was a very high degree of cross contamination of even non-PCB transformers during routine maintenance including relatively new transformers. The cumulative figure of transformers manufactured on or before 1986 and those manufacturing date not traceable are above 5200 units as at 2015.

Official declaration on banning importation of pure PCBs into Sri Lanka came to effect on 5th June 2013. The information collected from Sri Lanka customs confirms importation of PCBs contaminated equipment which are currently not regulated and not under licensed or banned.

Urgent actions have to be taken by relevant authorities to regulate importation of PCB containing, consisting and/or contaminated equipment into Sri Lanka.

Although Sri Lanka became signatory to Stockholm Convention, Rotterdam Convention and Basel Convention to manage transboundary movements requirements and other obligations Sri Lanka still not have an internal regulatory mechanism to regulate chemicals movements related to the three conventions. This is one of the significant drawbacks to manage PCBs (POPs) by relevant regulatory bodies.

An informal network established over four decades to get value out of those obsoletes or/and unserviceable transformers and capacitors. Local welding transformer manufactures were the main buyers of discarded transformers. Transformer oil and metal parts are being used to manufacture welding plant. The small scale welding manufacturing facilities were established over 40 years, which obtain/obtained waste oils/raw material from discarded transformers belong to CEB and other owners sold directly or by third party.

Survey data compiled in 2007 on contaminations of PCBs in welding transformer oil revealed that 48.6% of tested samples contaminated with PCBs above 50ppm. The survey completed in 2015 reflects that 7% (5 out of 68units) tested sample size is contaminated with PCBs. Therefore necessary actions need to be taken to identify PCB contaminated welding transformers within the secondary user sector for safe disposal.

Safe incineration trial was conducted in a state of the art pre-calciner kiln with appropriate monitoring scheme in 2006. It was demonstrated that the cement kiln was able to destroy PCB in an environmentally sound manner with destruction and removal efficiency (DRE) better than 99.9999% at the highest PCB feeding rate. Also unintentionally formed POPs (PCDD/PCDF and HCB) were monitored in the test burn and no additional formations of unintentional POPs were discovered in the test burn.

Outcome of the trail study confirmed an existing facility for safe incineration of PCBs containing transformer oil within Sri Lanka as one of the safe disposal options. From 2006 to date approximately 4250kg of PCBs containing oil were incinerated safely at the facility.

Summary of In-service and unserviceable transformers at CEB on operational area

Table S1: Summary of In-service transformers

In-service transformers	AGM DD1 No of Units	AGM DD2 No of Units	AGM DD3 No of Units	AGM DD4 No of Units	AGM Trans No of Units	AGM gen No: of units	Subtotal No of units
Transformers manufactured on or before 1986	164	136	159	33	48	73	613
Transformers manufacturing date not traceable	1817	1431	940	27	10	53	4278
Transformers manufactured on or later 1987	5823	4301	4217	349	262	190	15142
Total							20033

Table S2: Summary of out of order or unserviceable transformers

Out of order transformers	AGM DD1 No of Units	AGM DD2 No of Units	AGMDD 3 No of Units	AGM DD4 No of Units	AGM Trans No of Units	AGM Gen No of Units	Transformer at Kahapola yard as at 28/09/2015 (managed by LTL)	Sub total No of Units
Transformers manufactured on or before 1986	17	Not Identified	70	8	14	39	435	566
Transformers manufacturing date not traceable	22	Not identified	100	0	6	12	577	695
Transformers manufactured on or later 1987	33	3	424	8	2	4	1919	2393
Total								3654

Table S3: Summary table of PCB containing transformer oil co-process to date at a Cement Kiln

Co-processed Date	Co-processed Volume	PCB Concentration
3rd August 2006 (Test 01) 4th August 2006 (Test 02)	1900kg	14,000 mg Arochlor 1260/kg
2011 (Transformers and capacitors at Holcim Puthalam Plant)	350kg	10,050 mg Arochlor 1260/kg
2011 (Rest of the PCB transformer oil left at ITI in 3 IBCs after the initial test trial in 2006)	2000kg	8.89% (8890ppm) IBC 1 7.90% (7900) IBC2 14.92% (1492ppm) IBC3
Total co-process PCB containing transformers oil	4250kg	

Table S4: Summary of surveys conducted for PCBs containing welding transformers in Sri Lanka

The below data reflects that 48.6% tested sample size is contaminated with PCB above 50ppm in 2007

Welding plant category	Sampled Units / (as units %)	PCB positive above 50ppm form the collected samples
refilled	26 (70%)	12 (46%)
new welding plant	11 (30%)	6 (54%)
Total units	37	18

The below data reflects that 7% 5 out of 68 tested sample size is contaminated with PCB in 2015.

ITI Identification Number	PCB 1260 standards, ppm	PCB 1242 standards, ppm	PCB 1254 standard ppm
17	1.21	None	None
19	1.16	None	None
54	11.50	12.71	10.25
61	1.83	None	None
90	1.08	None	None

1. Introduction

Sri Lanka became a signatory to the Stockholm Convention on Persistent Organic Pollutants (POPs) on 5th September, 2001 and ratified the convention on 22nd December 2005. In order to meet the obligations towards the Convention, the Government of Sri Lanka prepared a National Implementation Plan (NIP) for the control of Persistent Organic Pollutants (POPs) with the assistance of United Nations Environment Programme and Global Environmental Facility (UNEP/GEF), which was published on June 2006.

The NIP for the control of Persistent Organic Pollutants (POPs) activity plan detailed out safe disposal of PCB by year 2016 including other POPs identified by the Convention. Implementation of the National Implementation Plan (NIP) for the control of Persistent Organic Pollutants (POPs) in Sri Lanka is yet to be commenced. During last eight years (2007 to 2014) very few actions were taken by both public and private sector on implementation activities of the NIP Sri Lanka including PCB management.

Polychlorinated Biphenyls are a class of synthetic organic chemicals. Since 1930 PCBs were used for a variety of industrial uses (mainly as dielectric fluids in capacitors and transformers, but also as flame retardants, ink solvents, plasticizers, etc.) because of their chemical stability. PCBs are fire resistant, have a low electrical conductivity, high resistance to thermal breakdown and a high resistance to oxidants and other chemicals.

Researches in the 1970s discovered that these characteristic that initially made it a popular additive represented a serious threat to human health and the environment, their production was gradually stopped. PCBs are considered to be immuno toxic and affect reproduction. Adverse effects associated to the exposure of PCBs are damage to the immune system, liver, skin, reproductive system, gastrointestinal tract and thyroid gland.[1]

Around 1.7 million tonnes of PCBs were produced between 1929 and 1989 and a lot of the equipment containing PCBs is still in use somewhere or stocked awaiting final disposal. As PCBs once released into the environment do not break down but travel over long distances and continue to pose health risks to humans, it is important to remove them from use and destroy existing stockpiles. Existing PCBs can be destroyed through the breaking of their molecular bonds by the input of either chemical or thermal energy. The most common

[1] http://chm.pops.int/Implementation/PCBs/Overview/tabid/273/Default.aspx

method is high temperature incineration, though other non-incinerative methods like declorination exist.

The PCB inventory prepared in June 2006 estimated around 18,500 transformers in the electricity and industrial sector, among which a very few pure PCB transformers have been identified. Initially it was assumed that only transformers manufactured before 1986 had high probability of containing PCB. However, sampling across different era of manufacture using field test kits and laboratory analysis indicated that there was a very high degree of cross contamination of even non-PCB transformers during routine maintenance even among relatively new transformers.

On subsequent random sampling of "Non PCB" transformers, several transformers above the lower limit (50 ppm) of PCB have been identified (within the range of 50-2000 ppm PCB). The contamination is assumed to have taken place during maintenance activities (especially filteration) or the in adverted use of PCB contaminated oil.

For elimination of PCB several alternative technologies are currently available. Safe incineration of PCB oil is one of the mostly adopted elimination technologies worldwide. A test burn for the destruction of PCBs in a cement kiln in Sri Lanka has been performed in 2006.

For this test two 750KVA, 6.6KV/400V Pyralene transformer oil collected from Kelanitissa powers station and stored at ITI from year 1988 were used. High concentration PCB–oil was stored in 60 L stainless steel drums. Furthermore PCB contaminated waste from cleaning of the transformers by washing/rinsing with diesel where stored in 200 L steel drums. The PCB–oil was confirmed to be Pyralene with an average concentration of 59% of PCB, 36% trichlorobenzene and 5% tetrachlorobenzene. The test was conducted in a state of the art pre-calciner kiln with appropriate monitoring scheme. The test was organized in a three day test burn.

The monitoring results demonstrated that the selected cement kiln was able to destroy PCB in an environmentally sound manner with destruction and removal efficiency (DRE) better than 99.9999% at the highest PCB feeding rate. Also unintentionally formed POPs (PCDD/PCDF and HCB) were monitored in the test burn and no additional formations of unintentional POPs were discovered in the test burn[2].

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[2] Karstensen, K.H, Mubarak, A.M., Gunadasa H.N., Wijegunasekara, B., Ratnayake, N., De Alwis, A., Fernando,J., Test burn with PCB–oil in a local cement kiln in Sri Lanka Chemosphere 78 (2010)717–723

This could be a positive development and possibly a part of solution in the PCB managements within Sri Lanka.

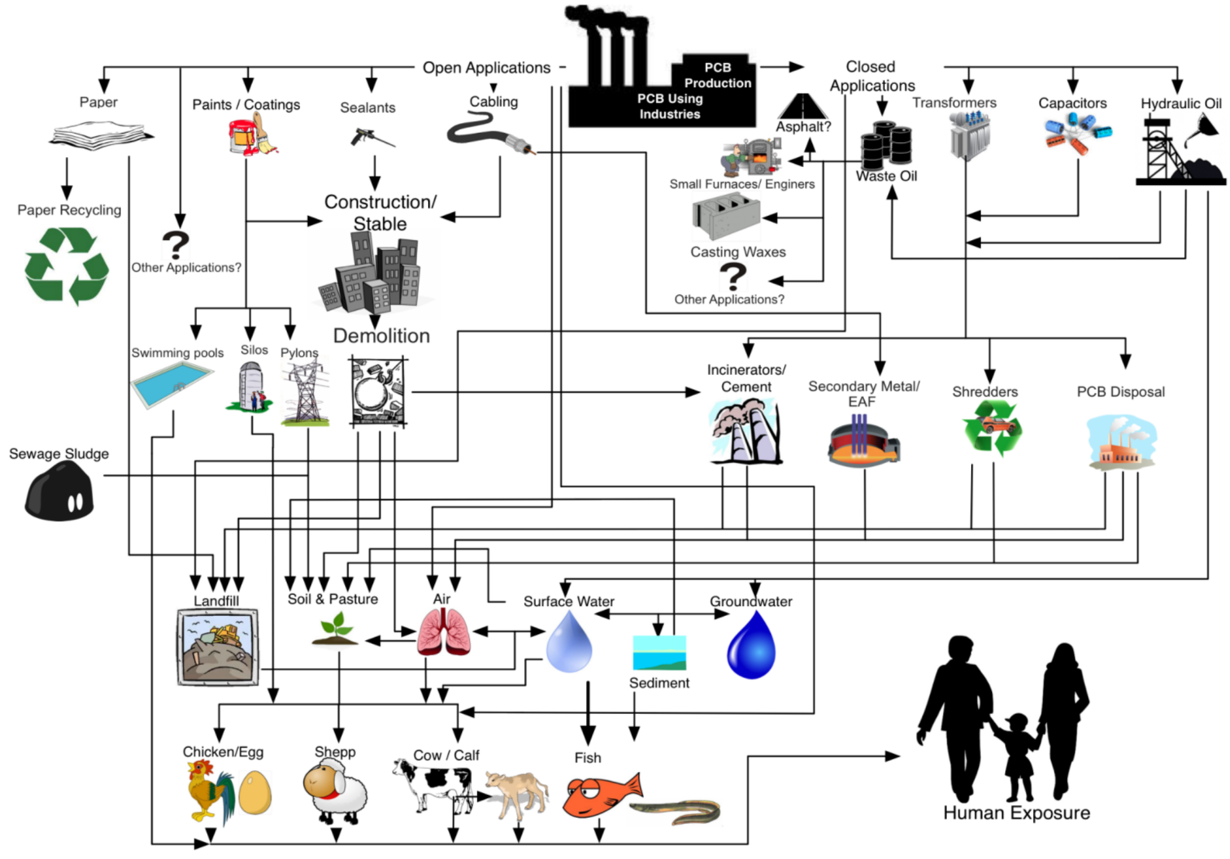


Fig1. **Open/closed PCB-applications, use, waste treatment and disposal/recycling, release and exposure pathways**

The NIP 2006 identified the following Problems related to PCBs.

- Lack of adequate legislation to control imports.
- Environmental and human impacts and baseline levels not adequately studied.
- Lack of sufficient resources for identification and analysis.
- Lack of appropriate treatment and storage systems for PCB contaminated oil and equipment.
- Contaminated sites yet to be identified.
- Cross contamination of non-PCB oil with PCB oil.

The NIP 2006 identified the following Actions to manage PCBs in Sri Lanka

1. Develop new legislation for management and prevention of new entry to the country.
2. Establish full inventory of PCB containing equipment.
3. Establish procedures to avoid / minimize cross contamination during equipment maintenance.
4. Establish appropriate laboratory facilities for PCB analysis / testing.
5. Establish and implement guidelines for phase out, transportation, storage and disposal of PCB containing equipment.
6. Establish progress monitoring mechanisms.
7. Capacity building for control and management of PCBs.
8. Safe Disposal of existing stocks and stockpiles.
9. Rehabilitation and decontamination of contaminated sites.
10. Introducing control measures to prevent cross contamination.

The proposed activities of the NIP in June 2006 related to PCB management yet to be implemented. For the last 8 years period (2006-2014) only a few activities were conducted on regulatory and destruction of PCB transformer oil.

Test burn with PCB–oil in a local cement kiln in Sri Lanka successfully completed in 2-4 August 2006. The destruction and removal efficiency (DRE) was better than 99.9999% at the highest PCB feeding rate (sum PCB 10.05 kg per hour). In 2013, legislation was enacted to prevent pure PCB and PCB containing substances entry in to the country.

The report review and upgrade the present status of the Preliminary Inventory of Polychlorinated Biphenyl (PCBs) issued on June 2006 Ministry of Environment, Sri Lanka.

2. Updating and improving the preliminary inventory of Polychlorinated Biphenyls (PCBs) of June 2006

The preliminary inventory of PCB compiled in 2005 assessed uses of PCB containing equipments within the country, likely quantities, equipment types, holders, their operational practices, health and safety management and end of life treatment of PCB containing equipment. The primarily inventory focused on the transformers exits within the power sector.

In today's context and as at 2005 the Ceylon Electricity Board (CEB) covers most of the electricity generation, transmission and distribution of electricity throughout the country. Lanka Electricity Company Ltd (LECO) covers fraction of the distribution system of the power sector. LTL Transformer (Pvt) Limited is the sole manufacture of Transformers in Sri Lanka. Therefore the three agencies are considered as the main entities that deal directly with transformers and capacitors, which may be pure and contaminated with PCBs. Additionally transformers and capacitors can be found at energy consuming industries such as metal industries and cement industry.

In 2005 it was confirmed that total amount of 18,616 transformers (Distribution, Generation Aux, Gen interbus, Generation, Transmission and Transmission-Aux) managed by the CEB, LECO and IPP were connected within the power supply net work in Sri Lanka.

"The population of transformers investigated has been limited to transformers manufactured before 1986 for the following reasons

- *Sri Lanka started the production of distribution transformers since 1983*
- *Electrical industries in most industrialized countries stopped*
- *To limit the scope of the preliminary inventory"*

The preliminary inventory June 2006[3] estimated a total number 2210 of transformers which have been manufactured on or before 1986. The percentage of positive transformers (manufactured on or before 1986) for the test population was 48%. Accordingly it was estimated that there are 1060 transformers in Sri Lanka containing transformer oil with over 50 ppm of PCBs.

[3] Preliminary Inventory of Polychlorinated Biphenyls (PCBs) , Ministry of Environment, Sri lanka June 2006

3. Evaluation of the estimated PCBs contaminated transformer in the preliminary inventory of PCBs in Sri Lanka - June 2006

3.1 Power service sector

The following Table 1 summarizes the distribution of PCB (>50 ppm) positive transformers according to the data given in the preliminary inventory June 2006.

Table 1: Distribution of PCB (>50 ppm) positive transformers according to the data given in the preliminary inventory

Geographical zone	Total Units	No of sampled	Tested	Positive (>50 ppm)	% sampled size from total unit	% Tested from sampled size	% Tested from Total Units	% Positive (>50 ppm) from sampled size	% confirmed Positive (>50 ppm) from total units
Central Province	1451	62	35	20	4	56	2	57	1
Eastern Province	1122	18	0	0	2	0	0	0	0
North Central Province	958	16	9	3	2	56	1	33	0
North Province	303	2	2	2	1	100	1	100	1
North Western Province	1739	30	8	1	2	27	0	13	0
Sabaragamuwa Province	1281	37	7	4	3	19	1	57	0
Southern Province	1818	44	14	14	2	32	1	100	1
Uva Province	1070	30	7	7	3	23	1	100	1
Western Province	6443	442	95	56	7	21	1	59	1
Total	**16185**	**681**	**177**	**107**	**4**	**26**	**1**	**60**	**1**

Percentage sampled tested from total units (16185) is 4%. Tested from the sampled size is 26% from the total units the value is almost 1%. Tested from the total units of each province is 1% except central province 2%.

PCBs positive (>50 ppm) from the sampled size for total units is 60% and for total unit 1%.. PCBs positive (>50 ppm) from the sampled size for total units in provinces are 56%, 0%.33%,100%, 13%, 100%, 57%, 100%, 100% and 50% and for total units the values are almost 1 and 0 (once round off to o digits) for all the provinces (Table 1).

This data reflects positive and negative biasness relevant to the PCB contaminated transformers. The sampling protocol was not a statistically designed one (it may not be possible due to various factors involved in the preliminary study and time limitations). The estimated 1060 PCBs contaminated transformers figure in the preliminary inventory shows a negative biasness.

“It is estimated that there are 2,292 tons of contaminated oil in Sri Lanka, in transformers which have been manufactured on or before 1986"

The minimum percentage 13% of PCBs positive (>50 ppm) from the sampled sized belongs to the North Western Province and the highest percentage is 100% for North, South and Uva Pro. To get a statistically agreed estimate the sample size should be at least 10% of the total units before 1986.

Considering above facts verification and testing for PCB in transformers oil in all the transformers manufactured on or before 1986 is required excluding any of the transformers identified as non PCB ones from name plates information and records available .

4. Composition of Power Sector transformers in Sri Lanka, 2015

Electricity generated in 2015 for supplying the national grid was 12357 GWh[4] (8769 GWh in 2005). Total number of transformers connected to the national grid was 24009 units in 2015 (18356 units in 2005). 83.4% of transformers (20043 units) in the national grid belong to the CEB. A questioner was developed to compile both in-service and obsolete transformers belong CEB. The Assets Management Division of CEB has complied the data received in to an Excel file covering Branch, Section, Location, Serial Number, Year of manufacture, Capacity and Seal type or not for both in-service and obsolete transformers that belong to the CEB.

Table 2 Composition and Ownership of Power sector Transformers in Sri Lanka, 2015.

Type of Transformers	CEB		LECO		IPP		Total number of transformers in service	
	2005	2015	*2005*	2015	*2005*	2015	*2005*	2015
Distribution	*15261*	**19398**	*2708*	**3885**	*None*	**None**	*17969*	**23283**
Generation	*107*	**316**	*None*	**None**	*74*	**90**	*181*	**406**
Transmission	*206*	**320**	*None*	**None**	*None*	**None**	*206*	**320**
Total	*15574*	**20034**	*2708*	**3885**	*74*	**90**	*18356*	**24009**

From the total in-service transformers at the CEB network, 4833 units were identified manufactured on or before 1986 including the ones manufacturing dates were not recognizable.

[4] Statistical Digest 2014, Ceylon Electricity Board , Colombo 0020, Sri Lanka ; www.ceb.lk

5. Break down of in-service and out of order transformers that belong to CEB, managed under AGMs Distribution, Generation and Transmission

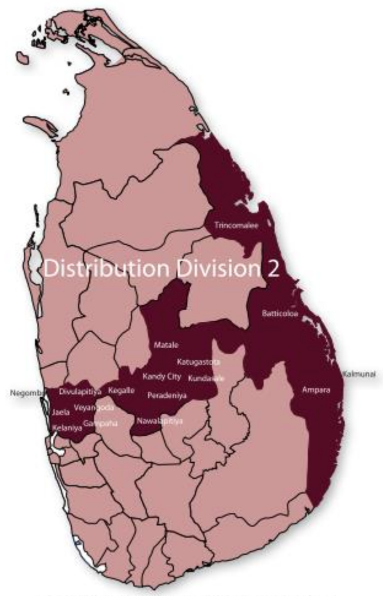
Table 3: In-service and out of order service transformers AGM –DD1

In-service transformers AGM DD 1	**Units**
Transformers manufactured on or before 1986	164
Transformers manufacturing date not traceable	1817
Transformers manufactured on or later 1987	5823
Total in-service	**7804**
Out of order transformers AGM DD 1	**Units**
Transformers manufactured on or before 1986	17
Transformers manufacturing date not traceable	22
Transformers manufactured on or later 1987	33
Total out of order	**72**

Table 4: In-service and & out of service transformers AGM DD2

In-service transformers AGM DD 2	**Units**
Transformers manufactured on or before 1986	136
Transformers manufacturing date not traceable	1431
Transformers manufactured on or later 1987	4301
Total in-service	**5869**

Out of service transformers AGM DD 2	**Units**
Transformers manufactured on or before 1986	Nil
Transformers manufacturing date not traceable	Nil
Transformers manufactured on or later 1987	3
Total out of service	**3**

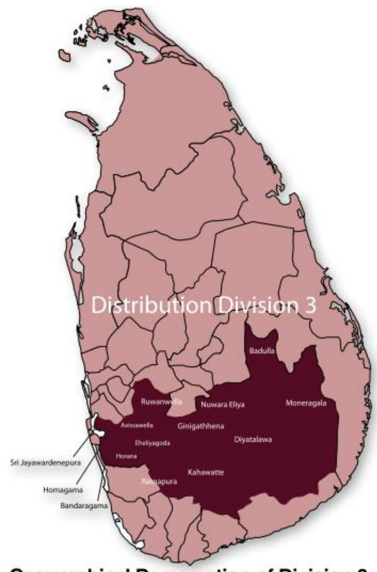


Distribution Division 2: Boundaries

Table 5: In-service and & out of service transformers AGM DD 3

In-service transformers AGM DD 3	Units
Transformers manufactured on or before 1986	159
Transformers manufacturing date not traceable	940
Transformers manufactured on or later 1987	4217
Total in-service units	**5316**

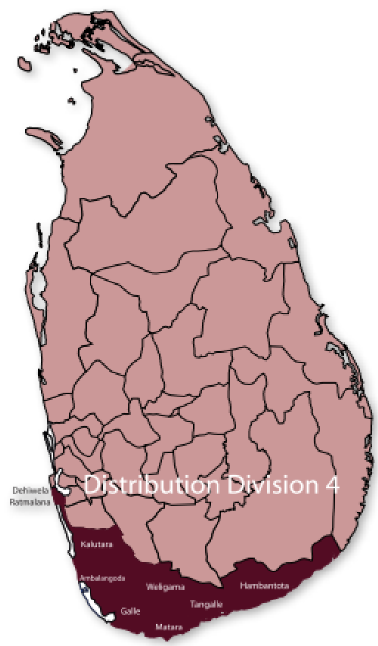
Out of service transformers AGM DD 3	Units
Transformers manufactured on or before 1986	70
Transformers manufacturing date not traceable	100
Transformers manufactured on or later 1987	424
Total out of order units	**594**



Geographical Demarcation of Division 3

Table 6: In-service and out of order transformers AGM DD 4

In-service transformers AGM DD 4	Units
Transformers manufactured on or before 1986	33
Transformers manufacturing date not traceable	27
Transformers manufactured on or later 1987	349
Total in-service	**409**
Out of service transformers AGM DD 4	**Units**
Transformers manufactured on or before 1986	8
Transformers manufacturing date not traceable	0
Transformers manufactured on or later 1987	8
Total out of order units	**16**



Distribution Division 4: Boundaries Map

Table 7: In-service and out of order transformers AGM Transmission

In-service transformers AGM Transmission	**Units**
Transformers manufactured on or before 1986	48
Transformers manufacturing date not traceable	10
Transformers manufactured on or later 1987	262
Total in-service units	**320**

Out of order transformers AGM Transmission	**Units**
Transformers manufactured on or before 1986	14
Transformers manufacturing date not traceable	6
Transformers manufactured on or later 1987	2
Total out of order units	**22**

Table 8: In-service and out of service transformers AGM Generations

In-service transformers AGM Generation	**Units**
Transformers manufactured on or before 1986	73
Transformers manufacturing date not traceable	53
Transformers manufactured on or later 1987	190
Total in-service	**316**

Out of service transformers AGM Generation	**Units**
Transformers manufactured on or before 1986	39
Transformers manufacturing date not traceable	12
Transformers manufactured on or later 1987	4
Total out of service	**55**

Table 9: Cumulative total of in-service CEB transformers as at 2015

In-service transformers CEB	**Units**
Transformers manufactured on or before 1986	614
Transformers manufacturing date not traceable	4278
Transformers manufactured on or later 1987	15142
Total in-service	**20034**

Fig. 2 Preliminary discussion to establish full inventory of PCB containing equipment at the office of AGM Assets management unit CEB on 21/01/2015.

Note: The Assets Management Unit is waiting to received data from few areas as such total number of the in Service transformers in CEB net work will be a slightly higher than 20043 units.

6. Survey of transformers at Tea factories

Ceylon Tea industry is one of the oldest agricultural industries in Sri Lanka over 130 years of history. Therefore this sector may have the oldest transformers which belong to the factories with pure possible PCB or PCB contaminated ones. A survey was conducted to collect details of those transformers at tea factories in Sri Lanka with the help of Sri Lanka Tea Board. Only 26 tea factories responded to the survey questioner. Out of 26 only 6 tea factories own transformers and rest belongs to the CEB.

Table 10: Summary of tea sector transformers

Tea Factory	Serial Number	Name of the Manufacturer	Year of manufature	Capacity
No:9	T-09-U0100-3409	LTL,country of originNorway	2009	100KVA
No:13	1.08.210 250.30100	Sri lank Transformers (Ltd) Country of origin Norway	2008	250 KVA
No:11	99 UO 1603266	LTL Sri Lanka	1999	160 KVA
No.19	87650	Crompton Greves England	1971	250 KVA
No:22	1.07.U0400 300-23	Cban, Norway	2007	1000KVA
	1.08.U0400 30057	Cban, Norway	2008	400KVA
No :23	05.U01030105	LTL, Sri Lanka	2005	100Kva

Presently total 720 tea factories are in operation[5]. The above table reflects only a small fraction of the total transformers in-service or out of order at those factories. The data reflects 14% of the total transformers at tea sector manufactured before 1986. Further actions are required to get inventories of transformers at tea factories to manage PCB containing transformers.

6.1 Obsolete and out of service Transformers in Sri Lanka 2015

Most of the obsolete and out of services transformers belong to CEB stored at Kahapola Transformer Yard, Moragaha Wattha, 191/1; Galpotha Junction, Polhena, Madapatha, Sri Lanka managed by LTLT. Rest of the obsolete and out of services transformers belongs to CEB stored at respective branches of the CEB network. In addition to

[5] http://www.pureceylontea.com/index.php/2014-02-26-10-02-57/tea-directory

the above, obsolete and out of services transformers belongs LECO stored at Transformer services center of LECO Littletonwatte, Samagipura Road, Off Bandaragama Road, Kudawaskadiwa, Waskaduwa.

Transformers which were obsolete in past belonging to CEB or private owners were sold to highest bidder. In past there were no mechanisms to control PCB containing transformers. This means any transformers containing PCB oil sold in past may end up in the environment and/or in locally manufactured welding transformers.

Table 11: Summary of out of order transformers as at 2015

Custodian	Location	Total Number of units	Total number of unit Manufactuerd on or before 1986 (including trasforemers those manufacturing dates were not recognisable).
CEB	CEB net work	762	288
CEB (managed by LTL)	Kahapola Yard	3029	1007
LECO	Waskaduwa Yard.	> 89 (PCB suspected transformers.	Further verifation required
Welding Transformers owners	Through out the country	Detail survey required.	Not applicable.

7. Imports control of pure PCB and contaminated with or containing Polychlorinated biphenyls (PCB) items to Sri Lanka

The NIP June 2006 addresses need of regulatory frame work to prevent pure PCB and PCB containing substances entry to the country. In 2013 legislation was enacted to prevent importation of pure PCB and PCB containing products under "Mineral fuels, mineral oils and products of their distillation" under HS Code 2710.91. The Gazette Extraordinary No. 1813/14 dated 5th June 2013 issued under the import and export control Act No 01 of 1969 specifically declared the banning of importation of pure PCB's. (HS Code 2710.91). The HS Code 2903.99.13 covers PCB containing substances PCB, PCT, PBB.

Table 12 Import Summary - Items contaminated with or containing Polychlorinated biphenyls (PCBs) imports during 2013 to 2015 March.[6]

HS Code	HS Description	2013	2014	2015 Jan-Mar
		Net Mass (Kg)	Net Mass(Kg)	Net Mass(Kg)
85041010	Ballats for discharge lamps: contaminated with or containing PCB	1,455	1,733	266
85042110	Contaminated or containing PCB Liquid dielectric transformers > 650 kVA	149	127	75
85042210	Contaminated with PCB, not exceeding 2000 KVA transformers	9,808	9,601	3,139
85043110	Transformers, nes, contaminated or containing PCB	30,525	1,220	292
85043210	Transformers.. Contaminated or containing with PCB	6,955	282	87
85043310	Contaminated with or containing PCB	156		389
85044010	Uninterrupted power supply unit, contining PCB	46,059	28,909	14,807
85044030	Other, static converters contaminated with PCB	7,626	15,494	799
85045010	Inductors contaminated o containig with PCB	150	1,476	468
85049010	Parts of transformers, inductors, convertors including PCB	27,259	35,083	10,533
85321010	Capacitors designed for 50/60 Hz contaminated or containing with PCB	6,996	1,042	145
85322210	Aluminium lectrolytic Contaminated or containing with PCB	7	38	34
85322310	Ceramic capacitors containing PCB		1	
85322410	Ceramic capacitors containing or with PCB	3	8	10
85322510	Dielectric paper or plastic capacitors with PCB	13	13	
85322910	Other capacitors containing or with PCB	104	400	19
85323010	variable or adjectable capacitors with PCB	6,184	140	12
85329010	Parts containing or contaminated with PCB		3	37
Grand Total		**143,451**	**95,570**	**31,113**

Sri Lanka customs data revealed the items given in the Table 12 were imported to Sri Lanka by approximately 300 different importers during the period of 2013 to March 2015. If

[6] Sri Lanka Customs

the above declarations are accurate, it may create greater concerns on the actions which needs to prevent entering PCBs containing items into the country. Therefore immediate actions has to be taken to verify these declarations and take appropriate actions to identify and secure PCB containing items for proper disposal. If the declarations found to be accurate, we may have to assure transformers imported since 1986 for PCBs contamination.

Department of Import and Export Control and Sri Lanka Customs have taken actions to control importation of items ***contaminated with or containing Polychlorinated biphenyls (PCBs)*** under HS Codes 85041010, 85042110, 85042210, 85043110, 85043210, 85043310, 85044010, 85044030, 85045010, 85049010, 85321010, 85322210, 85322310, 85322410, 85322510, 85322910, 85323010 and 85329010.

Official declaration on banning importation of pure PCBs into Sri Lanka came to effect in 5th June 2013. The information collected from Sri Lanka Customs confirms importation of PCBs contaminated equipment which are currently not regulated and not under licensed or banned under the relevant HSHdg 85. There is the possibility to accumulate those equipment (if PCBs present) in waste streams which requires to be disposed them as hazardous waste to prevent possible hazard for human health and the environment.

Immediate actions have to be taken by relevant authorities to regulate importation of PCB containing, consisting and/or contaminated equipment into Sri Lanka.

Table 13: The following tables of Tariff Proper chapters reflect regulatory laps of importation of PCB containing equipment to the country[7].

The below table ICL column indicates Imports Contorl Licenses status for items discribe under individual HS Code was. None of the items higlited yellow (PCB containig equipments) are not required ICL. Imports of those items are not regulated to date. Sri lanka Customs National Tariff Guide 2014 – Chapter 85 (Electrical machineary and equipment and parts therof; sound recorders and reproducers, television immage and recorders and reproducers, and parts and accessories of such articles.

85.32 Electrical capcitors, fixed, variable or adjustable (pre-set) (+).

HS Hdg.	HS Code		DESCRIPTION	ICL	Unit	AP
	8532.10.90	---	Other		kg	
		-	Other fixed capacitors :			
	8532.21	--	Tantalum :			
	8532.21.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.21.90	---	Other		kg	
	8532.22	--	Aluminium electrolytic :			
	8532.22.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.22.90	---	Other		kg	
	8532.23	--	Ceramic dielectric, single layer :			
	8532.23.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.23.90	---	Other		kg	
	8532.24	--	Ceramic dielectric, multilayer :			
	8532.24.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.24.90	---	Other		kg	
	8532.25	--	Dielectric of paper or plastics :			
	8532.25.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.25.90	---	Other		kg	
	8532.29	--	Other :			
	8532.29.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.29.90	---	Other		kg	
	8532.30	-	Variable or adjustable (pre-set) capacitors :			
	8532.30.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.30.90	---	Other		kg	
	8532.90	-	Parts :			

Sri Lanka Customs National Imports Tariff Guide

[7] National Customs Tariff Guide (NCTG) for 2015 incorporating all the amendments of levies up to 30.01.2015.

85 .04 Electrical transformers, satic concverters (for exapmle, rectifiers) and inductors.

HS Hdg.	HS Code	DESCRIPTION	ICL	Unit	
	8504.22.90	--- Other		u	
	8504.23	-- Having a power handling capacity exceeding 10,000 kVA :			
	8504.23.10	--- Contaminated with or containing Polychlorinated biphenyls (PCB)		u	
	8504.23.90	--- Other		u	
		- Other transformers :			
	8504.31	-- Having a power handling capacity not exceeding 1 kVA :			
	8504.31.10	--- Contaminated with or containing Polychlorinated biphenyls (PCB)		u	
	8504.31.90	--- Other		u	
	8504.32	-- Having a power handling capacity exceeding 1 kVA but not exceeding 16 kVA :			
	8504.32.10	--- Contaminated with or containing Polychlorinated biphenyls (PCB)		u	
	8504.32.90	--- Other		u	
	8504.33	-- Having a power handling capacity exceeding 16 kVA but not exceeding 500 kVA :			
	8504.33.10	--- Contaminated with or containing Polychlorinated biphenyls (PCB)		u	
	8504.33.90	--- Other		u	
	8504.34	-- Having a power handling capacity exceeding 500 kVA :			
	8504.34.10	--- Contaminated with or containing Polychlorinated biphenyls (PCB)		u	1
	8504.34.90	--- Other		u	1
	8504.40	- Static converters :			
	8504.40.10	--- Uninterruptible power supplies, contaminated with or containing Polychlorinated biphenyls (PCB)		u	
	8504.40.20	--- Other, uninterruptible power supplies		u	
	8504.40.30	--- Other, contaminated with or containing Polychlorinated biphenyls (PCB)		u	

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85.02 Electrical generation sets and rotary converters

HS Hdg.	HS Code		DESCRIPTION	I C L	
	8502.39	--	Other		
	8502.40	-	Electric rotary converters		
85.03	8503.00		**Parts suitable for use solely or principally with the machines of heading 85.01 or 85.02 :**		
	8503.00.10	---	Wound stators for electric motors of single phase		
	8503.00.20	---	Parts suitable for use solely or principally with electric generators		
	8503.00.90	---	Other		
85.04			**Electrical transformers, static converters (for example, rectifiers) and inductors.**		
	8504.10	-	Ballasts for discharge lamps or tubes :		
	8504.10.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		
	8504.10.90	---	Other		
		-	Liquid dielectric transformers :		
	8504.21	--	Having a power handling capacity not exceeding 650 kVA :		
	8504.21.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		
	8504.21.90	---	Other		
	8504.22	--	Having a power handling capacity exceeding 650 kVA but not exceeding 10,000 kVA :		
	8504.22.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB), not exceeding 2000 KVA		
	8504.22.20	---	Other, not exceeding 2000 KVA		
	8504.22.30	---	Other, contaminated with or containing Polychlorinated biphenyls (PCB)		

Sri Lanka Customs National Imports Tariff Guide

85.32		**Electrical capacitors, fixed, variable or adjustable (pre-set) (+).**				
	8532.10	-	Fixed capacitors designed for use in 50/60 Hz circuits and having a reactive power handling capacity of not less than 0.5 kvar (power capacitors) :			
	8532.10.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	

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HS Hdg.	HS Code		DESCRIPTION	ICL	Unit
	8504.40.90	---	Other		u
	8504.50	-	Other inductors :		
	8504.50.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		u
	8504.50.90	---	Other		u
	8504.90	-	Parts :		
	8504.90.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg
	8504.90.90	---	Other		kg

HS Hdg.	HS Code		DESCRIPTION	ICL	Unit	AP
	8532.90.10	---	Contaminated with or containing Polychlorinated biphenyls (PCB)		kg	
	8532.90.90	---	Other		kg	

8. Regulating PCB containing or contaminated oil in Sri Lanka by Central Environmental Authority

The Gazette extraordinary No. 1534/18 - Friday, February 01, 2008 stipulated under the National Environmental Act No. 47 of 1980 (Section 23A), following PCB containing waste has been prescribed as a Hazardous or "Scheduled Waste" under SCHEDULE VIII Part I – Scheduled waste from non specific sources

- Waste containing Polychlorinated biphenyles (PCBs) or Polychlorinated triphenyles (PCTs)
- Spent oil contaminated with PCB and/or PCTs
- Electrical equipment or parts containing or contaminated with PCBs and /or PCTs
- Retro filled transformer contaminated with PCBs and/or PCTs
- Containers and all waste materials contaminated with PCB and/ or PCTs

Under the regulation a person who operates a facility for Generation, Collection, Storage, Recovery, Recycle or Disposal should obtain the Scheduled Waste Management License from the Central Environmental Authority.

To manage PCB containing or contaminated soils, containing equipment or transformer oil, the owners in such operations should be aware that they do have the prescribed category items or liquid with them. But all of them may not be aware that they have PCB containing equipment or liquid. Therefore, controlling tool has to be introduced for proper implementation of the above regulation.

However to manage the PCB containing or contaminated oils containing equipment or transformer oil the owners (in other word generators) should be aware of that they do have the prescribed category items or liquid with them. In reality owners are not aware that they do have PCB containing equipment or liquids. The controlling mechanism has to be introduced for proper implementation of the above regulation.

Although Sri Lanka became signatory to Stockholm Convention, Rotterdam Convention and Basel Convention to adhere transboundary movements requirements and other obligations the country still does not have a internal regulatory mechanism (Gazetted Regulations) to regulate chemicals in activities related to the three conventions. This is one of the significant drawbacks to manage PCBs (POPs) by relevant regulatory bodies.

9. Secondary usage of Decommissioned transformers in Sri Lanka

The preliminary PCBs inventory identified that the decommissioned transformers across the country are supposed to be stored at LTL Transformer yards at Western Province in recent past. In real practice the transformers located suburb and other parts of the country were also sold at site.

It was verified from informal recycler that majority of obsolete transformers at CEB yards were disposed on open tender procedure until the recent intervention from the Ministry of Environment to sold after verification of those transformers free form PCB oil. Local welding transformer manufactures were the main buyers of discarded Transformers. Transformer oil and metal parts are being used to manufacture welding plants.

The small scale welding manufacturing facilities were established over a period of 40 years, which obtain/obtained waste oils/raw material from discarded transformers belong to CEB and other owners sold directly or by third party. The old transformers from this recycling may be a significant amount. Therefore necessary actions need to be taken to identify PCB contaminated welding transformers within the secondary user sector for safe disposal.

9.1 Informal recyclers

An informal network exists to make value out of decommissioned /discarded transformers for decades. Once transformers bought by informal recyclers those units were dismantled taking utmost care to collect the oil to the last drop, and metal structure to get metal parts. The insulation papers and other laminating papers inside the transformers which do not have monetary value are burned at their site.

Credible information was gathered on other applications of discarded transformer materials from those who operate in the informal network. It was found that transformer oil used to spray as an penetrating oil to clean bottom surface of vehicles during vehicle services for a long period. Transformers oil also used in formulating high temperature grease locally. The transformers oil sold for service stations and grease formulations (both non PCB and PCB) by the informal recyclers ends up in the environment.

This may be one of the challenges to immediately identify and assure safe storing of PCBs contaminated oil in circulating within the informal sector till proper disposal. Further cross contamination with PCBs oil during repair of welding transformers was possible. **The total amount of PCBs contaminated transformer oil distributes throughout the country is a significant amount.**

10. Secondary usage of transformer oil to fabricate welding transformers and to formulate grease

The assessment and management of PCB in Sri Lanka showed large challenges in respect to management capacity and the resources available. In particular the use of PCB oils and PCB contaminated oils (unintentionally used due to lack of awareness on PCB oils and lack of regulatory controls for the waste oils in past) by the informal sector such as grease producers, welders or producers of small transformers and the associated likely pollution of sites and humans highlight that the actions towards management of PCB need to be significantly improved and accelerated and the management frame has to be strengthened.

10.1 Secondary use of transformer oil for grease formulation

Recently three licenses were issued by the Central Environmental Authority to two welding transformer manufactures and to one Grease formulator to use discarded transformer oil (tested and assured none PCB oils) as a raw material. Awareness given in recent past to the sector encourage to get approval from CEA to avoid future liabilities. But there are more entrepreneurs in small scale in this sector still not got licensed from CEA. Urgent actions need to be taken to capture all of them into the regulatory frame work.

10.2 Secondary use of transformer oil for welding transformer fabrication

Total 101 samples from welding transformers and penetrating liquids used for vehicle service centres were collected from almost all the provinces in Sri Lanka to assess and verify PCB contamination levels. From 101 samples only 68 samples were analysed for PCB confirmation. The rest of the samples 33 (mainly collected from services centres) were not tested for PCB, as those were detergent liquids or detergent powder. Five 5 samples out of 68 was confirmed for PCB contamination by GC- ECD analysis. The following table summarise the results of the analysis. The samples were tested against PCB 1260, PCB 1242 and PCB 1254.

Table 14: PCBs positive samples in secondary use of transformer oil

ITI Identification Number	PCB 1260 standards, ppm	PCB 1242 standards, ppm	PCB 1254 standard ppm
17	1.21	None	None
19	1.16	None	None
54	11.50	12.71	10.25
61	1.83	None	None
90	1.08	None	None

The above data reflects that 7% of the tested sample size is contaminated with PCB. Details of the above positive samples is given in the Table 15.

Table 15: Details of welding oil samples survey

	ITI Sample No:	Label	Oil Type	Result/ ppm	Limit of Detection /ppm
1.	1	pandin oil	UN	Not detected	1
2.	2	2 4 – Tplus oil	Engine	Not detected	1
3.	3	8 1, Welding, Welding work shed	Welding	Not detected	1
4.	4	8 – 2 Welder shoe, Welding ware shot	Welding	Not detected	1
5.	5	05 Welders, Ponaiya BatiRaJ	Welding	Not detected	1
6.	6	7 – 2 ANOSH Welders	Welding	Not detected	1
7.	7	EVINC	UN	Not detected	1
8.	8	2 Siralingam Spectr	UN	Not detected	1
9.	11	3 M. XOGaRaJar, Lanva Soper DS	UN	Not detected	1
10.	14	DS 10, Zodiac Service Center, Anuradhapura	Service	Not detected	1
11.	15	3 Siragaram	UN	Not detected	1
12.	16	12 Service Station, Reezf Service center	Service	Not detected	1
13.	17	10 welding koasregat	Welding	1260 - 1.21	1
14.	18	11 Welding plant, poliyam kulama , puthala	Welding	Not detected	1
15.	19	10 Janalo Inorw z kanow	UN	1260 – 1.16	1
16.	20	7 service station Lanka service station	Service	Not detected	1
17.	21	6 Arc welding k. Diswaron	Welding	Not detected	1
18.	23	7 Arc welding, Anishan Manner	Welding	Not detected	1
19.	24	6 service station, male (Baral petroleum), sn service station.	Service	Not detected	1
20.	26	02- 2015/11/07 Ajapthe Iron works kurunegala	Welding	Not detected	1
21.	27	001 2012/11/07	UN	Not detected	1
22.	28	Nawathwwatta 04 Auto Service	Service	Not detected	1
23.	30	Upul Iron , Imbulgas deniya, welding station	Welding	Not detected	1
24.	31	Kegale Service station 05 service station		Not detected	1
25.	32	welding - 3 Jagath, Boyagama, Kurunegala	Welding	Not detected	1

26.	34	CMB 1 , Welding LASANTHA, Gamgodawila	Welding	Not detected	1
27.	35	Rathna Iron work,05,Kegale	Welding	Not detected	1
28.	36	CMB 2, DINUJAYA, Service centre, Athurugiriya	Service	Not detected	1
29.	37	3 Kaluthara North, Nagas Junction, Service	Service	Not detected	1
30.	38	02 Oreka Auto, Dodangoda Service centre	Service	Not detected	1
31.	39	3 Welding Arc, Palathota, Kaluthara Nishantha Bandara	Welding	Not detected	1
32.	40	2 Welding Arc, K.D. Chamdrasena, Dodangoda	Welding	Not detected	1
33.	42	Queen Arc 2015/11/11 Mathugama , Kushan	Welding	Not detected	1
34.	43	Elesthoni Arc 1, 2015/11/11 Mathugama, Kushan	Welding	Not detected	1
35.	44	Gampaha Welding show hall 2	Welding	Not detected	1
36.	45	Colombo Shan Auto welding Arc	Welding	Not detected	1
37.	46	Colombo P. A Ariyadasa Service Centre 3	Service	Not detected	1
38.	47	Gampaha malsha service centre 3	Service	Not detected	1
39.	48	Gampaha Lalith Iron works welding arc 3	Welding	Not detected	1
40.	49	Gampaha Sooriya Auto Service Centre 2	Service	Not detected	1
41.	51	Matara Service Station, Sharly Indika	Service	Not detected	1
42.	52	Matara welding, Indika Udayananda	Welding	Not detected	1
43.	54	Welding,Galle, Nilanatha Acahrigae	Welding	1242 – 12.71 1254 – 10.25 1260 – 11.50	1
44.	57	Welding, Galle, D. Mavilagama	Welding	Not detected	1
45.	61	Welding, Rathnapura, D.P. Siriwansa	Welding	1260 - 1.83	1
46.	62	Welding, Monaragala, Saman Kumara	Welding	Not detected	1
47.	64	Welding, Rathnapura, D.P. Siriwansa	Welding	Not detected	1
48.	65	Welding, Hambanthota,kirinda Industries	Welding	Not detected	1
49.	66	Welding, Galle, 3M, Samantha Kumara	Welding	Not detected	1
50.	67	Welding, Nuwaraeliya, Nalin Kumara	Welding	Not detected	1
51.	68	Welding, Badulla, Palitha Prasad	Welding	Not detected	1
52.	72	Welding Hambanthota, M.M. Ramsi	Welding	Not detected	1
53.	73	Service, Badulla, K.RM. Shiromi	Service	Not detected	1
54.	74	Service, Monaragala, N. Srunjan	Service	Not detected	1
55.	83	Trincomalea 1 AWS	UN	Not detected	1
56.	84	Trincomalea 1 AWS	UN	Not detected	1
57.	85	Batticolo 1 st	UN	Not detected	1
58.	86	Vavniya 1st	UN	Not detected	1
59.	87	Vavniya 1 AWS	UN	Not detected	1
60.	88	Ampara AWC	UN	Not detected	1
61.	89	Ampara AWC	UN	Not detected	1
62.	90	Vavuniya 2 AWS	UN	1260 – 1.08	1
63.	91	Batticolo 1 AWS	UN	Not detected	1
64.	92	Batticolo 2 AWS	UN	Not detected	1

65.	94	Batticolo 2 st	UN	Not detected	1
66.	95	Transformer Oil Puttalam	UN	Not detected	1
67.	96	Zodic Service Centre main Auto – Anuradhapura	Service	Not detected	1
68.	97	Zodic Service Centre Anuradhapura	Service	Not detected	1

In 2007, a NGO (the People to People Volunteers) collected 75 oil samples of welding transformers form Badulla, and Colombo districts and screened PCB, using BEXSIL. CLOR-N-OIL 50 PCB Screening test kits and GC analysis were carried out to for selected quantity to confirm the positive ones.

Table 16: Divisions of Badulla district where samples were collected.[8]

	PRADESIYASABA DIVITIONS	No: of samples collected	No: of samples tested
01	Walimada	09	03
02	Uva paranagama	07	03
03	Ella	05	03
04	Bandarawela	09	03
05	Mahiyanganaya	03	03
06	Meegahakiwula	08	03
07	Rididimaliyadha	03	03
08	Soranatota	02	02
09	Kandekatiya	02	02
10	Badulla	07	03
11	Haldumulla	05	03
12	Haputale	03	03
13	Haliela	06	03
	Colombo	06	04
	Total	75	41

"37 samples were tested for PCBs. Out of 37 samples 26 samples (70%) were collected from refilled welding plants and 11 samples (30%) were collected from new welding plants (fig. 2a). Twelve samples (46%) out of 26 refilled welding plants contained more than 50ppm PCBs and the rest was negative (54%)

[8] Prabath Kumara K.A. A., Wedage W., Manage P.M., PCB screening study in welding plants in Badulla district, national symposium The potential environmental Impacts of Exposure to hazardous natural and man-made chemicals and their proper management November 2012; 77-80 Organized by Center for Environmental Justice / Friends of Earth Sri Lanka and Department of Zoology, University of Sri Jayewardenepura Sri Lanka.

(FIG.2B). SIX SAMPLES (55%) WERE POSITIVE FOR MORE THAN 50PPM PCBS OUT OF 11 SAMPLES TESTED FOR NEW WELDING PLANTS. FIVE SAMPLES FROM 11 WERE NEGATIVE (45) (FIG. 2C)."

The results obtained from this study revealed that the contamination of PCBs in welding plants were considerably high. It is important to highlight that the sample collected from the welding plant manufacture company was also contaminated with PCBs and there is a high possibility to get the contaminated coolant to welders via new plants. Discussion made with the company revealed that the coolant oil for welding plants was purchased from the electricity board through the tender procedure. Thus, the present survey recommends carrying out a detail study to confirm the way to get the PCBs contaminated coolant oil to welders.

This study clearly shows that old transformer oil is used as coolant oil in welding plants. The possibility of exposure and self contamination among welders and cross contamination of their families and the environment are high due to lack of knowledge on the properties and toxic effects of the PCB contaminated transformer oil. Poor personal hygiene practices namely , not wearing personal protective equipment during refilling of welding plants with coolant oil and, during maintenance operations and, incorrect storage and disposal of the oil may subject the workers, their families and the environment to exposure and contamination. The eye and skin problems being the commonest health problems seen among the participants could be due to PCB exposure. Substandard health, safety and welfare facilities prevailing in these work places contribute to the situation further. In particular the regulatory frame and the control need to be strengthened to stop the reuse and recycling of waste oils which need proper management.

11. PCB ccontaminated sites/hotspots

In the past the decommissioned or out of services transformers were kept at site of CEB network. Those transformers stored at CEB premises in the respective authorities throughout the country. During the long storage period those transformers may leak in to the land. Proper storage facilities were not properly maintained.

Secondly, the lands of transformer repair yards and retro filling stations may be contaminated with PCB oil due to spillages and improper handling.

Thirdly, Transformer dismantling places, where recyclers and welding plant manufactures draining and collecting transformer oils and other materials and insulating and laminating oils burning places.

Those sites can be considered as PCB oil contaminated hotspots. Detailed study has to be commenced to develop a database for these sites and places. For these sites an urgent assessment is needed for possible human exposure, in particular livestock and chicken.

12. Capacity building to verify PCB containing items

12.1 Identification and quantification of PCBs in transformers and other electrical items

Presently two laboratories Chemical & Microbiological Laboratory of ITI and Geocycle laboratories of Holcim (Lanka) Ltd have established GC methods to analyze PCBs. Most of the private and public sector services laboratories are equipped with the necessary equipment to establish detect and identify PCB containing oils in transformers and other equipments.

Fig. 3 Sampling of obsolete transformers by ITI and Staff of Ministry of Environment at one of the CEB substation in Southern Province on 2013/6/14

12.2 To handle PCB equipment in a safe way

To date awareness given to those who directly handle PCB containing transformers and other electrical items are preliminary stage. Therefore detailed procedure/guidelines for such handling need to be developed and the staff should be appropriately trained.

13. To establish a full inventory of PCBs containing equipment

Following actions have to be taken to compile PCB contaminated or containing inventory

1. Continue the compilation of the CEB transformers inventory for both in service and out of service of CEB to the other owners.
2. Initiate commencement of developing inventories of capacitors and other electrical items with dielectric fluids that belongs to CEB, including PCBs in open applications.
3. Expand the above inventories data files to capture transformers, capacitors etc that belongs to private or public institutions other than CEB.
4. Develop a technical Guideline or Manual to short list transformers having possibility to containing PCB.
5. Develop a database to track chain of custody of the inventory items till the disposal completion.
6. Sampling and testing of short listed information for PCB and labeling.
7. Develop secured storage facilities to temporarily store PCB containing transformers and capacitors awaiting for final disposal.
8. Strengthen the existent legislative framework to prevent the recycling of PCBs containing equipment and to stop the reuse and recycling of waste oils, including setting up penalties/fines.
9. Strengthen the existent legislative framework to prevent the import of PCBs containing equipment, except for environmentally sound waste management, including setting up penalties/fines.
10. Ensure proper training of custom officials to ensure tracking of the PCBs containing equipment imports.
11. Develop a progressive elimination plan for the identified out of service and in service PCBs containing equipment in order to meet the Convention elimination deadlines and install a mandatory reporting system on the status of elimination for the PCBs containing equipment owners, including define penalties/fines for not reporting or meeting the elimination deadlines.
12. Develop and implement an environmentally sound management system for PCBs containing equipment (this includes storage, transport, disposal, contaminated sites).
13. Conduct awareness raising campaigns, especially for owners and informal recyclers of transformers, capacitors etc., on the sound management of equipment possible contaminated/contaminated with PCBs.

14. Establish procedures to avoid / minimize cross contamination during equipment maintenance.
15. Strengthen the monitoring and laboratory capacity for PCBs analysis/testing.
16. Identification, risk assessment, prioritization, securing and if possible start remediation activities of PCBs contaminated sites.

14. Handling of Obsolete or un serviceable Transformers at CEB , LECO and LTL

Immediate actions has to be taken to test those transformers over 3780 at the CEB, LECO and LTL premises for PCB if the available data is not sufficient for a conclusion. Relocate PCB positive transformers to a safe location till proper management mechanism is established.

Annexure 1: Summary of Transformers belongs to Ceylon Electricity Board EB at Kahapola Yards managed by LTLT as at September 2015

Serial No	kVA/kV	Manufactured year	Manufacturer
T/00/U02503084	250/33	NA	LTL
T/83/2607	160/33000	1984	LTL
T/83/4042	630/33000	1984	LTL
T/85/U02400	100/33000	1985	LTL
T/84/3167	250/33000	1985	LTL
T/84/3115	250/33000	1985	LTL
T/87/535	100/11000	1987	LTL
T/88/7549	100/33000	1988	LTL
T/88/7588	100/33000	1988	LTL
T/86/2782	160/33000	1988	LTL
T/88/13097	160/33000	1988	LTL
T/88/13148	160/33000	1988	LTL
T/88/13167	160/33000	1988	LTL
T/88/DP2016	250/33000	1988	LTL
T/88/DP4022	250/33000	1988	LTL
T/88/3767	400/33000	1989	LTL
T/88/4113	630/33000	1989	LTL
T/89/8001	100/33000	1989	LTL
T/89/13260	160/33000	1990	LTL
T/91/13522	160/33000	1992	LTL
T/92/13686	160/33000	1992	LTL
T/92/4175 (3526)	630/33000	1992	LTL
T/92/12028	250/11000	1992	LTL
T/93/1003189	100/33000	1993	LTL
T/92/23813	250/33000	1993	LTL
T/93/1003029	100/33000	1993	LTL
T/93/6303014	630/33000	1993	LTL
T/93/2501026	250/11000	1993	LTL
T/94/2503007	250/33000	1994	LTL
T/93/1003265	100/33000	1994	LTL
T/94/1003325	100/33000	1995	LTL
T/95/1603089	160/33000	1995	LTL
T/95/1603193	160/33000	1995	LTL
T/95/1003333	100/33000	1996	LTL
T/97/01603266	160/33000	1998	LTL
T/98/U04003013	400/33000	1998	LTL
T/98/1003025	100/33000	1998	LTL
T/99/U06301034	630/33000	1999	LTL
T/99/U01603064	160/33000	1999	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/99/U0/1003364	100/33000	1999	LTL
99/T/UO/6301026	630/11000	1999	LTL
339530	500/33	1953	Other
72066	500/11	1953	Other
339527	500/33/11	1953	Other
339512	500/33	1953	Other
339556	150/11	1953	Other
196229	200/11	1954	Other
195096	50/11	1954	Other
196201	10 10	1954	Other
5476	750/11	1955	Other
5478	750/11	1955	Other
449700	112.5/11	1955	Other
65222	150/11	1956	Other
65213	150/11	1956	Other
6266	100/33	1957	Other
6263	100/33	1957	Other
21610329	150/33	1959	Other
102788	400/33	1961	Other
412933	200/11	1961	Other
02/70/2246	10 33	1961	Other
RY/2487/49	100/33	1962	Other
313254	200/33	1963	Other
77777	380	1963	Other
6993	100/11	1964	Other
31461	150/33	1965	Other
31447	300/11	1965	Other
21769	100/33	1965	Other
337463	100/33	1966	Other
6502/12	200/33	1966	Other
337393	50/33	1966	Other
37365	300/33	1966	Other
337685	200/33	1967	Other
337683	200/33	1967	Other
337694	200/33	1967	Other
337711	200/33	1967	Other
337672	200/33	1967	Other
337469	100/33	1967	Other
340546	500/11	1967	Other
337828	30/11	1967	Other
337372	10 33	1967	Other
337778	300/33	1967	Other
337580	150/33	1967	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
337665	200/33	1967	Other
337863	150/11	1967	Other
337464	100/33	1967	Other
337573	150/33	1967	Other
337531	150/33	1967	Other
337440	75/33	1967	Other
337564	150/33	1967	Other
337585	150/33	1967	Other
337633	200/33	1967	Other
337541	150/33	1967	Other
337558	150/33	1967	Other
337759	300/33	1967	Other
337376	30/33	1967	Other
337418	75/33	1967	Other
337788	300/33	1967	Other
59502	300/33	1968	Other
340551	500/11	1968	Other
4499	100/33	1969	Other
4492	100/33	1969	Other
RY/1993/5	30/11	1969	LTL
4599	50/11	1969	Other
4759	100/11	1969	Other
357727	100/33	1969	Other
90810186	150/33	1970	Other
90410079	150/33	1970	Other
90810179	150/33	1970	Other
90810137	150/33	1970	Other
920013	500/33	1970	Other
391122	250/11	1970	Other
T380D/20613	250/33	1970	Other
S/1849276	100/33	1970	Other
T/90410114	150/33	1970	Other
27509	63/33	1970	Other
90810154	150/33	1970	Other
90410104	150/33	1970	Other
90810178	150/33	1970	Other
20174V	300/11	1970	Other
920139	100/33	1970	Other
27630V	250/33	1971	Other
27419V	40/33	1971	Other
02/70/2252	10//33	1971	Other
02/70/2243	10//33	1971	Other
2702253	10//33	1971	Other
27490V	63/33	1971	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
27529V	63/33	1971	Other
02/70/2257	10//33	1971	Other
27424V	40/33	1971	Other
27689	250/33	1971	Other
27717V	250/11	1971	Other
27715V/T2813674E	250/11	1971	Other
T/391114	160/11	1972	Other
391117	160/11	1972	Other
4709	100/33	1972	Other
IDA2749	100/11	1972	Other
V/19859	250/11	1973	Other
391281	400/33	1973	Other
104/27	250/33	1973	Other
27488V	63/33	1973	Other
591125	250/11	1973	Other
391150	50/33	1973	Other
391311	500/33	1973	Other
S/18722/76	160/33	1974	Other
115748	315/11	1975	Other
25933	150/11	1975	Other
S/18489/76	100/33	1976	Other
423658	300/11	1976	Other
920064	400/11	1976	Other
S/18715/76	160/33	1976	Other
T/380J/20803	100/11	1976	Other
S18512/76	100/33	1976	Other
110053B/10	150/33	1977	Other
V/27103	100/33	1977	Other
C49586	300/11	1977	Other
110053/C13	400/33	1977	Other
108793/B/4	500/11	1977	Other
110053B54	150/33	1977	Other
S/18725/76	160/33	1977	Other
108793/D2	500/11	1977	Other
RY 2487/44	100/33	1977	Other
110053B52	50/33	1977	Other
110053A18	100/33	1977	Other
RY/2488/52	150/33	1977	Other
1100531312	150/33	1977	Other
108793F5	250/11	1977	Other
380E4/20711	50/33	1978	Other
T380E20660	50/33	1978	Other
T/380E20728	50/33	1978	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
820398	50/11	1978	Other
9885509	250/33	1978	Other
A08146063	100/11	1978	Other
820390	160/11	1978	Other
9885608	250/33	1978	Other
T/380E/20706	50/33	1978	Other
820348	150/33	1978	Other
820417	250/11	1978	Other
T/380/920750	400/11	1978	Other
920144	100/33	1979	Other
52233	100/33	1979	Other
52202	250/33	1979	Other
A/08146127	500/11	1979	Other
A/08146126	500/11	1979	Other
920085	500/11	1979	Other
103072	100/11	1979	Other
A08146028	500/11	1979	Other
103071	50/11	1979	Other
25864	50/11	1979	Other
103089	150/11	1979	Other
25870	50/11	1979	Other
P09275A08	400/33	1979	Other
P03503A21	400/33	1979	Other
80745	250/11	1979	Other
920130	100/33	1979	Other
920053	400/11	1979	Other
52258	100/33	1979	Other
52458	50/33	1979	Other
103094	150/11	1979	Other
920123	100/33	1979	Other
A08146042	100/11	1979	Other
920136	100/33	1979	Other
P03503A38	400/33	1979	Other
PO3503A36	400/33	1979	Other
52252	100/33	1979	Other
920087	500/11	1979	Other
P03503A43	400/33	1979	Other
920012	500/11	1979	Other
A08146013	500/11	1979	Other
A08146019	500/11	1979	Other
P03503A18	400/33	1979	Other
920011	500/11	1979	Other
52251	100/33	1979	Other
A05146074	100/11	1979	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
920008	500/11	1979	Other
104275/20	50/33	1979	Other
10429202	150/33	1979	Other
920023	500/11	1979	Other
P03503A14	400/33	1979	Other
103128	250/33	1979	Other
10429004	50/33	1980	Other
55954	50/33	1980	Other
A 08200015	100/11	1980	Other
104291/11	100/33	1980	Other
10428107	100/33	1980	Other
11021309	100/33	1980	Other
A08200019	100/11	1980	Other
81955	400/11	1980	Other
55948	50/33	1980	Other
10428614	100/33	1980	Other
63880	160/33	1981	Other
63854	160/33	1981	Other
11481	500/11	1981	Other
11456	500/11	1981	Other
T/570F/34931	100/11	1981	Other
T/570B/34580	100/33	1981	Other
T/570D/34838	250/33	1981	Other
63402	250/11	1981	Other
63829	160/33	1981	Other
63418	250/11	1981	Other
63382	250/11	1981	Other
63401	250/11	1981	Other
63381	250/11	1981	Other
82827/4	400/33	1982	Other
82827/9	400/33	1982	Other
118876	400/33	1982	Other
T/570B/34253	100/33	1982	Other
T/570B/34206	100/33	1982	Other
118893	400/11	1982	Other
T/570B/34194	100/33	1982	Other
T/570C/34790	160/33	1982	Other
117947	250/33	1982	Other
117805	100/33	1982	Other
T/570E/34884	63/11	1982	Other
117823	100/33	1982	Other
T570F/34930	100/11	1982	Other
T570B/34219	100/33	1982	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
T570B/34212	100/33	1982	Other
T570G34972	160/11	1982	Other
T/570B/34220	100/33	1982	Other
T570B/34227	100/33	1982	Other
117828	100/33	1982	Other
117894	160/33	1982	Other
T/570B/34257	100/33	1982	Other
22261	250/33	1982	Other
T/570G/34963	160/11	1982	Other
T/570G/34970	160/11	1982	Other
22249	250/33	1982	Other
T/570B/34327	100/11	1982	LTL
T570B/34241	100/33	1982	Other
117861	100/33	1982	Other
T570B/34316	100/33	1982	Other
T510B/34238	100/33	1982	Other
117874	160/33	1982	Other
T/570B/34321	100/33	1982	Other
117817	100/33	1982	Other
P21419A03	250/33	1982	Other
32889V	250/33	1982	Other
P21419A02	250/33	1982	Other
32885V	250/33	1982	Other
117826	100/33	1982	Other
T/570B/34186	100/33	1982	Other
T/570B/34218	100/33	1982	Other
117961	250/33	1982	Other
117856	100/33	1982	Other
T/570B34258	100/33	1982	Other
117958	250/33	1982	Other
117919	250/33	1982	Other
T/570B/34305	100/33	1982	Other
T/82827/1	400/33	1982	Other
T/570C/34777	160/33	1982	Other
117788	63/33	1982	Other
118008	500/33	1982	Other
T82/1520	400/11	1982	LTL
T570C/34775	160/33	1982	Other
22267	630/11	1982	Other
118892	400/11	1982	Other
NRP	400/11	1982	Other
117998	500/33	1982	Other
T/570E/34879	63/11	1982	Other
T/82/4013	630/33	1982	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
22263	630/11	1982	Other
T/570B/34631	100/33	1983	Other
T/570B/34569	100/33	1983	Other
T/570B/34416	100/33	1983	Other
T/570B/34472	100/33	1983	Other
T/570B/34716	100/33	1983	Other
T/570B/43370	100/33	1983	Other
T/570B/34384	100/33	1983	Other
T/83/2600	160/33	1983	LTL
T/570B/34429	100/33	1983	Other
32294	630/33	1983	Other
32219	400/33	1983	Other
T/570B/34682	100/33	1983	Other
T/83/3027	250/33	1983	LTL
T/570B/34741	100/33	1983	Other
T/570B/34460	100/33	1983	Other
32252	160/11	1983	Other
T/570B/34346	100/33	1983	Other
T/570B/34338	100/33	1983	Other
T/570B/34506	100/33	1983	Other
T/570B/34463	100/33	1983	Other
T570B/34674	100/33	1983	Other
T/83/1550	400/11	1983	LTL
T/570B/34755	100/33	1983	Other
T/83/1542	400/11	1983	LTL
32308	400/33	1983	Other
T570B/34577	100/33	1983	Other
T/570B/34466	100/33	1983	Other
T/83/1540	400/11	1983	LTL
T/570B/34480	100/33	1983	Other
T/570B/34534	100/33	1983	Other
T/570B/34553	100/33	1983	Other
T/570B/34464	100/33	1983	Other
NRP	100/33	1983	Other
T/570B/34636	100/33	1983	Other
T/570B/34509	100/33	1983	Other
T/570B/34668	100/33	1983	Other
32229	250/33	1983	Other
T/570B/34760	100/33	1983	Other
T/83/3600	400/33	1983	LTL
T/570B/34570	100/33	1983	Other
T570B/34711	100/33	1983	Other
32347	160/11	1983	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
T/83/3619	400/33	1983	LTL
T/570B/34683	100/33	1983	Other
32212	400/33	1983	Other
T/83/1035	250/11	1983	LTL
337826	30/11	1983	Other
T/570B/34421	100/33	1983	Other
T/570B/34512	100/33	1983	Other
32273	2000	1983	Other
T/82/1752	630/11	1983	LTL
T83/1059	250/11	1983	LTL
T/570B/34705	100/33	1983	Other
32231	630/11	1983	Other
T/83/1066	250/11	1983	Other
T/83/3601	400/11	1983	LTL
T/83/4027	630/11	1983	LTL
T/570B/34447	100/33	1983	Other
T/83/1541	400/11	1983	LTL
T/83/3018	250/33	1983	LTL
T/84/3091	250/33	1984	LTL
T/84/2317	100/33	1984	LTL
T/84/3095	250/33	1984	Other
T/84/3073	250/33	1984	LTL
T/84/2629	160/33	1984	LTL
T/84/3083	250/33	1984	LTL
70863	1000/11	1984	Other
120279	630/11	1984	Other
T/84/677	160/11	1984	LTL
T/84/335	100/11	1984	LTL
T/84/3643	400/33	1984	LTL
T/84/2333	100/33	1984	LTL
T/84/2326	100/33	1984	LTL
T/84/2341	100/33	1984	LTL
T/84/2323	100/33	1984	LTL
T/84/2304	100/33	1984	LTL
T/84/705	160/11	1984	LTL
T/84/679	160/11	1984	LTL
T/84/2324	100/33	1984	LTL
T/84/3099	250/33	1984	LTL
T/84/3067	250/33	1984	LTL
T/84/2628	160/33	1984	Other
T/83/3626	400/33	1984	LTL
843026/4	160/33	1984	Other
848026/10	160/33	1984	Other
T/84/3093	250/33	1984	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/84/2624	160/33	1984	LTL
T/84/06	63/11	1984	LTL
T/84/1113	250/11	1984	LTL
T/84/2729	160/33	1985	LTL
T/84/2391	100/33	1985	LTL
T/85/3668	400/33	1985	LTL
T/85/3189	250/33	1985	LTL
T/85/3170	250/33	1985	LTL
T/85/3222	250/33	1985	LTL
T/85/802	160/11	1985	LTL
T/85/1620	400/11	1985	LTL
T/84/3139	250/33	1985	LTL
T/88/4104	630/33	1985	LTL
T/85/1203	150/11	1985	LTL
T/85/35	63/11	1985	LTL
T/84/2358	100/33	1985	LTL
T/85/1226	250/11	1985	LTL
T/85/380	100/11	1985	LTL
T/84/2684	160/33	1985	LTL
T/85/365	100/11	1985	LTL
T/85/1799	630/11	1985	LTL
T/85/1217	250/11	1985	LTL
T/84/2374	100/33	1985	LTL
T/84/1121	250/11	1985	LTL
T/85/1207	250/11	1985	LTL
T/84/2383	100/33	1985	Other
T/85/367	100/11	1985	LTL
T/85-26	63/11	1985	LTL
T/85/4070	630/33	1985	LTL
T/85/3203	250/33	1985	LTL
T85/3661	400/33	1985	LTL
T/85/812	160/11	1985	LTL
T/85/1165	250/11	1985	LTL
T/85/1182	250/11	1985	LTL
T/85/3653	400/33	1985	LTL
1108926T8	2000	1985	Other
T/84/3132	250/33	1985	LTL
T85/1573	400/11	1985	LTL
T/85/716	160/11	1985	LTL
T/85/726	160/11	1985	LTL
T/85/1584	400/11	1985	LTL
T/8518	63/11	1985	LTL
T/85/1804	630/11	1985	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/85/3244	250/33	1986	LTL
T/86/2540	100/33	1986	LTL
T/85/1253	250/11	1986	LTL
T/86/2459	100/33	1986	LTL
T/86/2538	100/33	1986	LTL
T/89/2407	100/33	1986	LTL
T/85/2761	160/33	1986	LTL
T/86/2557	100/33	1986	LTL
T/85/2412	100/33	1986	LTL
T/85/1240	250/11	1986	LTL
T/86/2586	100/33	1986	LTL
T/85/785	160/11	1986	LTL
T/85/1251	250/11	1986	LTL
T/86/2506	100/33	1986	LTL
T/85/434	100/11	1986	LTL
T/85/1239	250/11	1986	LTL
T/86/2576	100/33	1986	LTL
T/85/1277	250/11	1986	LTL
T/85/3245	250/33	1986	LTL
T/85/1613	400/11	1986	LTL
D6420960	500/11	1986	Other
T/85/3226	250/33	1986	LTL
T/86/2579	100/33	1986	LTL
T/85/413	100/11	1986	LTL
T/86/2783	160/33	1986	LTL
T/85/1269	250/11	1986	LTL
T/86/2431	100/33	1986	LTL
T/85/816	100/11	1986	LTL
T/85/1635	400/11	1986	LTL
T/85/3677	400/33	1986	LTL
T/86/2824	160/33	1986	LTL
T/86/2587	100/33	1986	LTL
T/86/2728	160/33	1986	LTL
T/85/4067	630/11	1986	LTL
T/85/1639	400/11	1986	LTL
T/85/2762	160/33	1986	LTL
T/87/3282	250/33	1987	LTL
T/86/7167	100/33	1987	LTL
T/87/4086	630/33	1987	LTL
T/86/7074	100/33	1987	LTL
T/86/2837	160/33	1987	LTL
T/86/7123	100/33	1987	LTL
T/87/2962	160/33	1987	LTL
T/87/2949	160/33	1987	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/87/7316	100/33	1987	LTL
T/87/7358	100/33	1987	LTL
T/86/12000	250/11	1987	LTL
T/86/12003	250/11	1987	LTL
T/87/833	160/11	1987	LTL
T/87/2983	160/33	1987	LTL
T/87/71	63/11	1987	LTL
T/87/7509	100/33	1987	LTL
T/87/65	63/11	1987	LTL
T/87/442	100/11	1987	LTL
T/86/7098	100/33	1987	LTL
T/87/7197	100/33	1987	LTL
T/87/7226	100/33	1987	LTL
T/87/450	100/11	1987	LTL
T/87/70	63/11	1987	LTL
T/87/1603066	160/33	1987	LTL
ME 487		1987	Other
T/86/7045	100/33	1987	LTL
T/86/7011	100/33	1987	LTL
T/87/7356	100/33	1987	LTL
T/86/7155	100/33	1987	LTL
T/87/2943	160/33	1987	LTL
T/87/7192	100/33	1987	LTL
T87/7241	100/33	1987	LTL
7257	100/33	1987	LTL
T/87/2954	160/33	1987	LTL
T/87/444	100/11	1987	LTL
T/86/7076	100/33	1987	LTL
T/87/66	63/11	1987	Other
T/86/7069	100/33	1987	LTL
T/87/3698	400/33	1987	LTL
T/86/7043	100/33	1987	LTL
T/87/2984	100/33	1987	LTL
T/86/7190	100/33	1987	LTL
T/86/2597	100/33	1987	LTL
T/87/2969	160/33	1987	LTL
T/87/2906	160/33	1987	LTL
T87/2971	160/33	1987	LTL
T/87/826	160/11	1987	LTL
T/87/834	160/11	1987	LTL
T/87/4083	630/33	1987	LTL
T/87/4075	630/33	1987	LTL
T/88/7173	100/33	1987	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/87/7350	100/33	1988	LTL
T/88/13110	160/33	1988	LTL
T/88/3400	250/33	1988	LTL
3728	400/33	1988	LTL
T/13039	160/33	1988	LTL
7849	100/33	1988	LTL
T/88/7518	100/33	1988	LTL
T/88/7838	100/33	1988	LTL
T/88/7559	100/33	1988	LTL
7482	100/33	1988	LTL
T/88/7412	100/33	1988	LTL
T/87/7263	100/33	1988	LTL
T/88/7437	100/33	1988	LTL
T/88/7786	100/33	1988	LTL
T/87/5027	630/11	1988	LTL
T/88/4541	400/11	1988	LTL
T/88/DP4013	400/11	1988	LTL
T/88/DP2004	250/11	1988	LTL
T/88/3712	400/33	1988	LTL
T/87/13026	160/33	1988	LTL
T/88/7422	100/33	1988	LTL
T/87/7338	100/33	1988	LTL
T/88/655	100/11	1988	LTL
T/88/522	100/11	1988	LTL
T/87/7463	100/33	1988	LTL
T/87/7465	100/33	1988	LTL
T/87/7387	100/33	1988	LTL
T/87/7513	100/33	1988	LTL
T/88/7612	100/33	1988	LTL
T/87/7434	100/33	1988	LTL
7425	100/33	1988	LTL
T/87/7473	100/33	1988	LTL
T/88/7610	100/33	1988	LTL
13139	160/33	1988	LTL
T/88/7379	100/33	1988	LTL
T/87/7460	100/33	1988	LTL
T/87/3704	400/33	1988	LTL
T/88/7613	100/33	1988	LTL
T/88/7611	100/33	1988	LTL
T/87/3310	250/33	1988	LTL
T/87/866	160/11	1988	LTL
T/87/7512	100/33	1988	LTL
T/88/13079	160/33	1988	LTL
T/87/3746	400/33	1988	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/87/7260	100/33	1988	LTL
T/87/7352	100/33	1988	LTL
T/87/7306	100/33	1988	LTL
T/88/13084	160/33	1988	LTL
T87/7390	100/33	1988	LTL
T/88/3502	250/33	1988	LTL
T/88/7547	100/33	1988	LTL
T/88/7360	100/33	1988	LTL
T/88/7309	100/33	1988	LTL
T/88/7847	100/33	1988	LTL
T/88/3376	250/33	1988	LTL
T/87/7301	100/33	1988	LTL
T/88/13127	160/33	1988	LTL
T/88/13173	160/33	1988	LTL
T/88/7573	100/33	1988	LTL
T/87/7266	100/33	1988	LTL
T/87/7500	100/33	1988	LTL
T/88/7685	100/33	1988	LTL
T/88/13178	160/33	1988	LTL
T/87/7515	100/33	1988	LTL
T/88/13168	160/33	1988	LTL
T/88/13121	160/33	1988	LTL
T88/13155	160/33	1988	LTL
T88/7874	100/33	1988	LTL
7278	100/33	1988	LTL
T/88/7481	100/33	1988	LTL
T/87/7265	100/33	1988	LTL
T/87/3737	400/33	1988	LTL
T/87/13076	160/33	1988	LTL
T/88/33402	250/33	1988	LTL
3295	250/33	1988	LTL
T/87/3350	250/33	1988	LTL
T/88/7725	100/33	1988	LTL
T/88/4100	630/33	1988	LTL
T88/7347	100/33	1988	LTL
T88/862	160/11	1988	LTL
1934	630/11	1988	LTL
4093	630/33	1988	LTL
1930	630/11	1988	Other
T/88/3705	400/33	1988	LTL
T/88/7648	100/33	1988	LTL
T/88/13252	160/33	1989	LTL
T/88/7784	100/33	1989	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/88/13228	160/33	1989	LTL
T/88/3418	250/33	1989	LTL
T/88/7769	100/33	1989	LTL
T/88/7770	100/33	1989	LTL
T/89/13266	160/33	1989	LTL
T/88/3480	250/33	1989	LTL
T/874524	400/11	1989	LTL
T/88/7702	100/33	1989	LTL
T/88/3775	400/33	1989	LTL
T/89/161181	160/11	1989	LTL
T/89/7927	100/33	1989	LTL
T/89/7928	100/33	1989	LTL
T/88/7799	100/33	1989	LTL
7943	100/33	1989	LTL
T/89/7760	100/33	1989	LTL
T/89/7921	100/33	1989	LTL
T/89/3521	250/33	1989	LTL
T/89/161101	160/11	1989	LTL
T/88/7662	100/33	1989	LTL
T/89/7772	100/33	1989	LTL
T/88/1293	250/11	1989	LTL
T/89/161134	160/11	1989	LTL
T/88/3483	250/33	1989	LTL
T/89/7945	100/33	1989	LTL
T/89/13203	160/33	1989	LTL
T/89/13278	160/33	1989	LTL
T/88/7808	100/33	1989	LTL
T/88/7720	100/33	1989	LTL
T/88/3441	250/33	1989	LTL
T/89/7742	100/33	1989	LTL
T/88/3768	400/33	1989	LTL
T/89/13256	160/33	1989	LTL
T88/4118	630/33	1989	LTL
T/89/1330	160/33	1989	LTL
T/88/3793	400/33	1989	LTL
T/88/7671	100/33	1989	LTL
T/89/7814	100/33	1989	LTL
T/89/3783	400/33	1989	LTL
T/89/61111	160/11	1989	LTL
T/89/3443	250/33	1989	LTL
T/89/3785	400/33	1989	LTL
T/88/7718	100/33	1989	LTL
T/88/7715	100/33	1989	LTL
T/88/4124	630/33	1989	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
3797	400/33	1989	LTL
T/89/U01603052	160/33	1989	LTL
T/88/4110	630/33	1989	LTL
T89/7744	100/33	1989	LTL
T89/3787	400/33	1989	LTL
T88/7741	100/33	1989	LTL
T89/7739	100/33	1989	LTL
T88/3445	250/33	1989	LTL
T/88/3465	250/33	1989	LTL
T/89/3781	400/33	1989	LTL
T/88/7615	100/33	1989	LTL
3762	400/33	1989	LTL
T/88/3755	400/33	1989	LTL
T/90/8069	100/33	1990	LTL
13273	160/33	1990	Other
T/88/3507	250/33	1990	LTL
T/89/13286	160/33	1990	LTL
T/90/13505	160/33	1990	LTL
T/93/1003005	100/33	1990	LTL
T/89/1011404	100/11	1990	LTL
T/89/7958	100/33	1990	LTL
T/87/470	100/11	1990	LTL
T/89/101142	100/11	1990	LTL
T/89/7900	100/33	1990	LTL
T/89/7931	100/33	1990	LTL
T/89/7898	100/33	1990	LTL
T/88/7899	100/33	1990	LTL
T/88/3503	250/33	1990	LTL
T/90/8120	100/33	1990	LTL
T/89/7896	100/33	1990	LTL
T/89/1011103	100/11	1990	LTL
T/89/8014	100/33	1990	LTL
T/90/3540	250/33	1990	LTL
T/89/101195	100/11	1990	LTL
T89/161189	160/11	1990	LTL
T89/1611314	160/11	1990	LTL
T/89/101158	100/11	1990	LTL
T/89/101182	100/11	1990	LTL
T/90/8043	100/33	1990	LTL
T/90/7979	100/33	1990	LTL
T/89/7965	100/33	1990	LTL
T70880	1000	1990	LTL
T/96/6301017	630/11	1990	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T89/13282	160/33	1990	LTL
T/89/101115	100/11	1990	LTL
T/89/101143	100/11	1990	LTL
T/89/161145	160/11	1990	LTL
T/90/13340	160/33	1991	LTL
T/90/13358	160/33	1991	LTL
T/91/8244	100/33	1991	LTL
T/90/8017	100/33	1991	LTL
T/90/13355	160/33	1991	LTL
T/90/8055	100/33	1991	LTL
T/91/8167	100/33	1991	LTL
T/91/13441	160/33	1991	LTL
T/89/13300	160/33	1991	LTL
T/90/8067	100/33	1991	LTL
T/90/3582	250/33	1991	LTL
T/91/8217	100/33	1991	LTL
T/90/1349	250/11	1991	LTL
T/91/63110601	630/11	1991	LTL
T/91/1373	250/11	1991	LTL
T/88/7860	100/33	1991	LTL
T/90/8128	100/33	1991	LTL
T/91/8237	100/33	1991	LTL
T/91/13512	160/33	1991	LTL
T/91/8287	100/33	1991	LTL
T/91/13484	160/33	1991	LTL
T/91/13479	160/33	1991	LTL
T/91/8243	100/33	1991	LTL
T/90/8036	100/33	1991	LTL
T/90/8071	100/33	1991	LTL
T/90/8057	100/33	1991	LTL
T/90/13356	160/33	1991	LTL
T/91/0533001	50/33	1991	LTL
T/90/8018	100/33	1991	LTL
T/91/13482	160/33	1991	LTL
T/89/161191	160/11	1991	LTL
T/91/8179	100/33	1991	LTL
T90/25318	25/33	1991	LTL
T90/25311	25/33	1991	LTL
T90/8112	100/33	1991	LTL
T/89/8006	100/33	1991	LTL
T/91/3636	250/33	1991	LTL
T/90/8044	100/33	1991	LTL
T/90/133300	160/33	1991	LTL
T/90/8090	100/33	1991	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/91/13472	160/33	1991	LTL
T/90/8154	100/33	1991	LTL
T/91/8169	100/33	1991	LTL
T/90/3585	250/33	1991	LTL
T/90/13394	160/33	1991	LTL
T/90/8084	100/33	1991	LTL
T/90/8029	100/33	1991	LTL
T/91/13458	160/33	1991	LTL
T/99/13435	160/33	1991	LTL
T/90/4144	630/33	1991	LTL
T/90/1011411	100/11	1991	LTL
T/90/13349	160/33	1991	LTL
T/90/8026	100/33	1991	LTL
T/89/3538	250/33	1991	LTL
T/89/8009	100/33	1991	LTL
T/89/8010	100/33	1991	LTL
T/91/1611367	160/11	1991	LTL
T/91/13440	160/33	1991	LTL
T/91/13471	160/33	1991	LTL
T/90/3577	250/33	1991	LTL
T/91/3634	250/33	1991	LTL
T/91/13457	160/33	1991	LTL
T/90/3589	250/33	1991	LTL
T/91/1348	250/11	1991	LTL
T/91/13494	160/33	1991	LTL
T/90/3599	250/33	1991	LTL
T/92/1611436	160/11	1992	LTL
T/92/3850	400/33	1992	LTL
T/92/4574	400/11	1992	LTL
T/92/8733	100/33	1992	LTL
T/92/8665	100/33	1992	LTL
T/91/4168	630/33	1992	LTL
T/92/8575	100/33	1992	LTL
T/92/3742	250/33	1992	LTL
T/92/8637	100/33	1992	LTL
T/91/8313	100/33	1992	LTL
T/91/13536	160/33	1992	LTL
T/92/8740	100/33	1992	LTL
T/92/8761	100/33	1992	LTL
T/91/8407	100/33	1992	LTL
T/91/8338	100/33	1992	LTL
T/91/8381	100/33	1992	LTL
T/92/8643	100/33	1992	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/91/8668	100/33	1992	LTL
T/92/13701	160/33	1992	LTL
T/92/13703	160/33	1992	LTL
T/92/13622	160/33	1992	LTL
T/92/13721	160/33	1992	LTL
T/91/13524	160/33	1992	LTL
T/92/3743	250/33	1992	LTL
T/92/3717	250/33	1992	LTL
T/92/3638	100/33	1992	LTL
T/92/3888	400/33	1992	LTL
T/92/5057	630/11	1992	LTL
T/92/8480	100/33	1992	LTL
T/91/8285	100/33	1992	LTL
T/92/8626	100/33	1992	LTL
T/92/05033018	50/33	1992	LTL
T/91/8365	100/33	1992	LTL
T/91/8370	100/33	1992	LTL
T/92/8441	100/33	1992	LTL
T/92/1011461	100/11	1992	LTL
T/92/8481	100/33	1992	LTL
T/92/8675	100/33	1992	LTL
T/91/8335	100/33	1992	LTL
T/91/1611398	160/11	1992	LTL
T/92/1011472	100/11	1992	LTL
T/92/3869	400/33	1992	LTL
T/91/8298	100/33	1992	LTL
T/91/8395	100/33	1992	LTL
T/92/1011464	100/11	1992	LTL
T/92/8728	100/33	1992	LTL
T/91/8333	100/33	1992	LTL
T/92/0533021	50/33	1992	LTL
T/91/8272	100/33	1992	LTL
T/92/8541	100/33	1992	LTL
T/92/3750	250/33	1992	LTL
T/91/8327	100/33	1992	LTL
T/91/8299	100/33	1992	LTL
T/91/1424	250/11	1992	LTL
T/92/1011473	100/11	1992	LTL
T/92/8622	100/33	1992	LTL
T/92/13587	160/33	1992	LTL
T/92/8630	100/33	1992	LTL
T92/1679	400/11	1992	LTL
T91/8432	100/33	1992	LTL
T/92/1483	250/11	1992	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/92/3712	250/33	1992	LTL
T/92/13561	160/33	1992	LTL
T/92/3875	400/33	1992	LTL
T/92/13583	160/33	1992	LTL
T/92/1011468	100/11	1992	LTL
T/92/8493	100/33	1992	LTL
T/92/8603	100/33	1992	LTL
T/92/16011450	160/11	1992	LTL
T/91/8271	100/33	1992	LTL
T/92/1011497	100/11	1992	LTL
T/91/1611376	160/11	1992	LTL
T/92/13634	160/33	1992	LTL
T/91/8317	100/33	1992	LTL
T/92/8509	100/33	1992	LTL
T/92/13691	160/33	1992	LTL
T/92/13602	160/33	1992	LTL
T/91/13539	160/33	1992	LTL
192/8628	100/33	1992	LTL
T/92/3858	400/33	1992	LTL
92/8683	100/33	1992	LTL
T/92/8511	100/33	1992	LTL
T/92/1011467	100/11	1992	LTL
T/92/8425	100/33	1992	LTL
T/91/8290	100/33	1992	LTL
T/92/1678	400/11	1992	LTL
T/91/1674	400/11	1992	LTL
T/91/1396	250/11	1992	LTL
T/91/8314	100/33	1992	LTL
T/91/3641	250/33	1992	LTL
T/92/8453	100/33	1992	LTL
T/92/13642	160/33	1992	LTL
T/92/3865	400/33	1992	LTL
T/91/13545	160/33	1992	LTL
T/92/3876	400/33	1992	LTL
T/91/13544	160/33	1992	LTL
T/92/1011516	100/11	1992	LTL
T/92/8610	100/33	1992	LTL
T/91/1611403	160/11	1992	LTL
T/92/4188	630/33	1992	LTL
T/91/8269	100/33	1992	LTL
T/91/13532	160/33	1992	LTL
T/91/1956	630/11	1992	LTL
T/92/1611456	160/11	1992	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T91/4160	630/33	1992	LTL
T92/1611453	160/11	1992	LTL
T/92/1001108	1000/11	1992	LTL
391244	160/33	1992	LTL
T/92/1960	630/11	1992	LTL
T/91/3839	400/33	1992	LTL
T/92/1460	250/11	1992	LTL
T/91/3836	400/33	1992	LTL
T/92/4180	630/33	1992	LTL
T/92/1466	250/11	1992	LTL
T/92/1481	250/11	1992	LTL
T/92/8649	100/33	1992	LTL
T/92/8787	100/33	1993	LTL
T/93/I4001003	400/11	1993	LTL
T/93/1603188	160/33	1993	LTL
T/93/1003435	100/33	1993	LTL
T/93/1003148	100/33	1993	LTL
T/93/1603041	160/33	1993	LTL
T/93/1603120	160/33	1993	LTL
T/93/1603054	160/33	1993	LTL
T/93/1003317	100/33	1993	LTL
T/93/1603283	160/33	1993	LTL
T/92/13740	160/33	1993	LTL
T/93/1003338	100/33	1993	LTL
T/93/6303003	630/33	1993	LTL
T/92/4204	630/33	1993	LTL
T/93/1003289	100/33	1993	LTL
T/93/1003319	100/33	1993	LTL
T/92/8798	100/33	1993	LTL
T/93/1003132	100/33	1993	LTL
T/92/13735	160/33	1993	LTL
T/93/1603193	160/33	1993	LTL
T/92/13797	160/33	1993	LTL
T/93/1003165	100/33	1993	LTL
T/93/1603026	160/33	1993	LTL
T/93/1603164	160/33	1993	LTL
T/93/1603135	160/33	1993	LTL
T/92/8830	100/33	1993	LTL
T/93/1603142	160/33	1993	LTL
T/93/2503143	250/33	1993	LTL
T/93/250377	250/33	1993	LTL
T/93/1603107	160/33	1993	LTL
T/93/4003011	400/33	1993	LTL
T/93/1003102	100/33	1993	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/93/1003190	100/33	1993	LTL
T/93/1003101	100/33	1993	LTL
T/93/1603112	160/33	1993	LTL
T/93/1003340	100/33	1993	LTL
T/92/1555	250/11	1993	LTL
T/93/1187	100/11	1993	LTL
T/92/1543	250/11	1993	LTL
T/93/1003401	100/33	1993	LTL
T/93/1003308	100/33	1993	LTL
T/93/1003175	100/33	1993	LTL
T/92/8775	100/33	1993	LTL
T/93/1001056	100/11	1993	LTL
T/93/1003044	100/33	1993	LTL
T/93/1003078	100/33	1993	LTL
T/93/1003406	100/33	1993	LTL
T/92/3786	250/33	1993	LTL
T/93/1003085	100/33	1993	LTL
T/93/1001004	100/11	1993	LTL
T/92/8815	100/33	1993	LTL
T/92/8803	100/33	1993	LTL
T/93/2503019	250/33	1993	LTL
T/92/8777	100/33	1993	LTL
T/93/1003335	100/33	1993	LTL
T/93/1601043	160/11	1993	LTL
T/92/8789	100/33	1993	LTL
T/93/1003368	100/33	1993	LTL
T/93/1003437	100/33	1993	LTL
T/93/1003077	100/33	1993	LTL
T/93/1003159	100/33	1993	LTL
T/93/1003222	100/33	1993	LTL
T/93/1003256	100/33	1993	LTL
T/93/1003464	100/33	1993	LTL
T/93/1003166	100/33	1993	LTL
T/93/1003334	100/33	1993	LTL
T/93/1003262	100/33	1993	LTL
T/93/1001060	100/11	1993	LTL
T/83/1530	400/11	1993	LTL
T/93/2503082	250/33	1993	LTL
T/93/2503083	250/33	1993	LTL
T/93/1003070	100/33	1993	LTL
T/93/1003040	100/33	1993	LTL
T/92/1526	250/11	1993	LTL
T/93/1601038	160/11	1993	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/93/1003299	100/33	1993	LTL
T/93/1603060	160/33	1993	LTL
T/931003008	100/33	1993	LTL
T93/4003007	400/33	1993	LTL
T92/8581	100/33	1993	LTL
T/93/2501017	250/11	1993	LTL
T93/6303011	630/33	1993	LTL
T93/1001135	100/11	1993	LTL
T93/1003168	100/33	1993	LTL
T/92/8793	100/33	1993	LTL
T/93/1603181	160/33	1993	LTL
T/93/1003417	100/33	1993	LTL
T/93/1601036	160/11	1993	LTL
T/93/2503070	250/33	1993	LTL
T/93/1003079	100/33	1993	LTL
T/95/1003269	100/33	1993	LTL
T/93/4003019	400/33	1993	LTL
T/93/1003014	100/33	1993	LTL
T/93/4003003	400/33	1993	LTL
T/93/1603182	160/33	1993	LTL
T/93/1603071	160/33	1993	LTL
T/93/1603141	160/33	1993	LTL
T/93/1003062	100/33	1993	LTL
T/92/8835	100/33	1993	LTL
T/92/1611486	160/11	1993	LTL
T/93/1601046	160/11	1993	LTL
T/93/1003402	100/33	1993	LTL
T/93/1001114	100/11	1993	LTL
T/93/1003360	100/33	1993	LTL
T/93/2501022	250/11	1993	LTL
T/93/1001069	100/11	1993	LTL
T/93/4003034	400/33	1993	LTL
T/93/1003244	100/33	1993	LTL
T/93/1003429	100/33	1993	LTL
T/93/1003359	100/33	1993	LTL
T/93/1003230	100/33	1993	LTL
T92/1533	250/11	1993	LTL
T93/1001045	100/33	1993	LTL
T/92/3806	250/33	1993	LTL
T/93/2503102	250/33	1993	LTL
T/93/2503102	250/33	1993	LTL
T/93/1601020	160/11	1993	LTL
T/93/1603121	160/33	1993	LTL
T/93/1003173	100/33	1993	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/93/1003532	100/33	1993	LTL
T/93/1003396	100/33	1993	LTL
T/93/1003400	100/33	1993	LTL
T/92/8794	100/33	1993	LTL
T/93/1003240	100/33	1993	LTL
T/93/1001073	100/11	1993	LTL
T/93/1003398	100/33	1993	LTL
T/93/1003280	100/33	1993	LTL
T/93/1003323	100/33	1993	LTL
T/93/4003013	400/33	1993	LTL
T/95/1603050	160/33	1993	LTL
T/93/1603099	160/33	1993	LTL
T/92/13766	160/33	1993	LTL
T/93/100335	100/33	1993	LTL
T/92/3894	400/33	1993	LTL
T/93/16012	160/11	1993	LTL
T/93/1001054	100/11	1993	LTL
T/93/1601019	160/11	1993	LTL
T/93/10003005	1000/33	1993	LTL
T/93/10003010	1000/33	1993	LTL
T/93/1003341	100/33	1993	LTL
T93/4003005	400/33	1993	LTL
T93/4003010	400/33	1993	LTL
T/93/1601061	160/11	1993	LTL
T/93/2501030	250/11	1993	LTL
T/92/1537	250/11	1993	LTL
T/92/1522	250/11	1993	LTL
986903005		1993	Other
T/93/4003014	400/33	1993	LTL
T/93/1603048	160/33	1993	LTL
T/93/1603210	160/33	1994	LTL
T/94/1003208	100/33	1994	LTL
T/94/1603083	160/33	1994	LTL
T/94/1603117	160/33	1994	LTL
T/93/2503163	250/33	1994	LTL
T/93/1603259	160/33	1994	LTL
T/94/1603142	160/33	1994	LTL
T/94/4003017	400/33	1994	LTL
T/94/1603001	160/33	1994	LTL
T/93/1603209	160/33	1994	LTL
T/94/6303004	630/33	1994	LTL
T/94/1003021	100/33	1994	LTL
T/94/1003215	100/33	1994	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/94/1603040	160/33	1994	LTL
T/94/6303009	630/33	1994	LTL
T/94/2503096	250/33	1994	LTL
T/94/1603026	160/33	1994	LTL
T/93/1003484	100/33	1994	LTL
T/93/1603240	160/33	1994	LTL
T/94/1003071	100/33	1994	LTL
T/94/1003069	100/33	1994	LTL
T/94/1003125	100/33	1994	LTL
T/93/2503168	250/33	1994	LTL
T/94/1603067	160/33	1994	LTL
T/93/I6301012	630/11	1994	LTL
T/94/1003109	100/33	1994	LTL
T/94/1003005	100/33	1994	LTL
T/94/1003103	100/33	1994	LTL
T/94/1003221	100/33	1994	LTL
T/94/1003150	100/33	1994	LTL
T/94/1003316	100/33	1994	LTL
T/93/1003475	100/33	1994	LTL
T/94/1003211	100/33	1994	LTL
T/93/1003522	100/33	1994	LTL
T/94/2501058	250/11	1994	LTL
T/93/1003478	100/33	1994	LTL
T/94/4003014	400/33	1994	LTL
T/93/1001186	100/11	1994	LTL
T/94/1003165	100/33	1994	LTL
T/94/1003228	100/33	1994	LTL
T/94/1603057	160/33	1994	LTL
T/94/1003222	100/33	1994	LTL
T/93/1003517	100/33	1994	LTL
T/94/1003259	100/33	1994	LTL
T/94/1603120	160/33	1994	LTL
T/94/I1601001	160/11	1994	LTL
T/93/1603225	160/33	1994	LTL
T/94/1003159	100/33	1994	LTL
T/94/1001043	100/11	1994	LTL
T/94/1001036	100/11	1994	LTL
T/93/1003446	100/33	1994	LTL
T/93/1003528	100/33	1994	LTL
T/94/1003044	100/33	1994	LTL
T93/1601089	160/11	1994	LTL
94/1003089	100/33	1994	LTL
T/93/1003445	100/33	1994	LTL
T/93/1603276	160/33	1994	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/94/1603129	160/33	1994	LTL
T/94/1603049	160/33	1994	LTL
T/94/1003197	100/33	1994	LTL
T/93/1003059	100/33	1994	LTL
T/94/1003195	100/33	1994	LTL
T/93/1003509	100/33	1994	LTL
T/93/1003472	100/33	1994	LTL
T/93/1003455	100/33	1994	LTL
T/94/2503092	250/33	1994	LTL
T/94/1003086	100/33	1994	LTL
T/94/1603033	160/33	1994	LTL
T/94/4003034	400/33	1994	LTL
T/94/1603021	160/33	1994	LTL
T/94/2503023	250/33	1994	LTL
T/93/1003467	100/33	1994	LTL
T/94/1003102	100/33	1994	LTL
T/93/2503169	250/33	1994	LTL
T/94/1003131	100/33	1994	LTL
T/94/2501037	250/11	1994	LTL
T/93/1003506	100/33	1994	LTL
T/94/1003126	100/33	1994	LTL
T/94/1003093	100/33	1994	LTL
T/94/1001065	100/11	1994	LTL
T/94/4001017	400/11	1994	LTL
T/94/1603066	160/33	1994	LTL
T/94/1003059	100/33	1994	LTL
T/94/1603022	160/33	1994	LTL
T/94/1603054	160/33	1994	LTL
T/94/1603058	160/33	1994	LTL
T/94/1003003	100/33	1994	LTL
T/94/1001053	100/11	1994	LTL
T/94/1603141	160/33	1994	LTL
T/94/2503066	250/33	1994	LTL
T/94/4003002	400/33	1994	LTL
T/94/2503040	250/33	1994	LTL
T/94/100030003	1000/33	1994	LTL
T/94/1603103	160/33	1994	LTL
T/93/1001205	100/11	1994	LTL
T/94/1603020	160/33	1994	LTL
T/93/1603219	160/33	1994	LTL
T94/1003099	100/33	1994	LTL
T/94/1603106	160/33	1994	LTL
T/94/1601015	160/11	1994	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/94/10003001	1000/33	1994	LTL
T/94/4003011	400/33	1994	LTL
T/94/1603156	160/33	1994	LTL
T/94/1603013	160/33	1994	LTL
T/93/1603231	160/33	1994	LTL
T/94/1603259	160/33	1995	LTL
T/95/2503024	250/33	1995	LTL
T/94/2503126	250/33	1995	LTL
T/95/1603077	160/33	1995	LTL
T/95/1603111	160/33	1995	LTL
T/94/1603227	160/33	1995	LTL
T/94/2503144	250/33	1995	LTL
T/95/2503107	250/33	1995	LTL
T/95/10003018	1000/33	1995	LTL
T/94/1003327	100/33	1995	LTL
T/95/1003194	100/33	1995	LTL
T/95/1003202	100/33	1995	LTL
T/95/1603081	160/33	1995	LTL
T/94/1603188	160/33	1995	LTL
T/95/1003161	100/33	1995	LTL
T/95/4003013	400/33	1995	LTL
T/95/2503041	250/33	1995	LTL
T/95/6303036	630/33	1995	LTL
T/95/1603110	160/33	1995	LTL
T/95/1603201	160/33	1995	LTL
T/95/1003029	100/33	1995	LTL
T/95/16030109	160/33	1995	LTL
T/94/2503143	250/33	1995	LTL
T/95/I8001009	800/11	1995	LTL
T/93/I4001007	400/11	1995	LTL
T/95/I4001011	400/11	1995	LTL
T/95/1003116	100/33	1995	LTL
T/95/1001067	100/11	1995	LTL
T/95/1603097	160/33	1995	LTL
T/95/2501036	250/11	1995	LTL
T/95/1603009	160/33	1995	LTL
T/95/2501035	250/11	1995	LTL
T/94/1603229	160/33	1995	LTL
T/95/4001020 NRP-4	400/11	1995	LTL
T/95/1003225	100/33	1995	LTL
T/95/4003037	400/33	1995	LTL
T/95/1003028	100/33	1995	LTL
T/94/1001074	100/11	1995	LTL
T/94/1003285	100/33	1995	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/95/1003118	100/33	1995	LTL
T/95/1001066	100/11	1995	LTL
T/95/1003154	100/33	1995	LTL
T/94/1603194	160/33	1995	LTL
T/95/1001041	100/11	1995	LTL
T/94/1601077	160/11	1995	LTL
T/95/1001065	100/11	1995	LTL
T/94/1603205	160/33	1995	LTL
T/94/1003252	100/33	1995	LTL
T/95/1001060	100/11	1995	LTL
T/94/1001083	100/11	1995	LTL
T/95/1001037	100/11	1995	LTL
T/95/1003027	100/33	1995	LTL
T/95/1003148	100/33	1995	LTL
T/95/1003212	100/33	1995	LTL
T/95/1003020	100/33	1995	LTL
T/95/1003159	100/33	1995	LTL
T/95/2503092	250/33	1995	LTL
T/95/2503006	250/33	1995	LTL
T/95/1003153	100/33	1995	LTL
T/95/1603017	160/33	1995	LTL
T/95/1003079	100/33	1995	LTL
T/95/1603027	160/33	1995	LTL
195/1003156	100/33	1995	LTL
T94/1003260	100/33	1995	LTL
T/95/2501029	250/11	1995	LTL
T/95/2501016	250/11	1995	LTL
T/95/2501039	250/11	1995	LTL
T/95/1603003	160/33	1995	LTL
T/95/1603152	160/33	1995	LTL
T/95/6303015	630/33	1995	LTL
T/94/1003319	100/33	1995	LTL
T/95/2503030	250/33	1995	LTL
T/94/1603181	160/33	1995	LTL
T/94/1003280	100/33	1995	LTL
T/95/1003218	100/33	1995	LTL
T/94/1003279	100/33	1995	LTL
T/95/2503079	250/33	1995	LTL
T/95/1003102	100/33	1995	LTL
T/94/1603187	160/33	1995	LTL
T/95/1003080	100/33	1995	LTL
T/95/1603100	160/33	1995	LTL
T/95/2503106	250/33	1995	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/94/2501095	250/11	1995	LTL
T/95/1003115	100/33	1995	LTL
T/95/1003221	100/33	1995	LTL
T/94/6303019	630/33	1995	LTL
T/95/1003089	100/33	1995	LTL
T/95/1003178	100/33	1995	LTL
T/95/2503094	250/33	1995	LTL
T/94/1003278	100/33	1995	LTL
T/95/1003025	100/33	1995	LTL
T/95/2503102	250/33	1995	LTL
T/95/2503112	250/33	1995	LTL
T/95/2503083	250/33	1995	LTL
T/95/1003062	100/33	1995	LTL
T/95/1003012	100/33	1995	LTL
T/95/4001005	400/11	1995	LTL
T/95/6301013	630/11	1995	LTL
T/95/1601073	160/11	1995	LTL
T/94/1003323	100/33	1995	LTL
T/95/6303016	630/33	1995	LTL
T/94/1003277	100/33	1995	LTL
T/94/6301030	630/11	1995	LTL
T/95/6303008	630/33	1995	LTL
T/95/40003023	400/33	1995	LTL
T/94/2501093	250/33	1995	LTL
T95/1003008	100/33	1995	LTL
T/95/6303014	630/33	1995	LTL
T94/2503131	250/33	1995	LTL
T94/4003048	400/33	1995	LTL
T95/1003014	100/33	1995	LTL
T/95/1603026	160/33	1995	LTL
T/95/2503055	250/33	1995	LTL
T/95/2501059	250/11	1995	LTL
T/95/1003016	100/33	1995	LTL
T/95/6303009	630/33	1995	LTL
T/95/2503061	250/33	1995	LTL
T/94/4001023	400/11	1995	LTL
T/94/1603246	160/33	1995	LTL
T/95/4003030	400/33	1995	LTL
T/96/1603099	160/33	1996	LTL
T/96/1003004	100/33	1996	LTL
T/96/2503039	250/33	1996	LTL
T/96/1003189	100/33	1996	LTL
T/96/1003199	100/33	1996	LTL
T/95/2503141	250/33	1996	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/95/1003248	100/33	1996	LTL
T/95/1003315	100/33	1996	LTL
T/95/1003236	100/33	1996	LTL
T/96/1003006	100/33	1996	LTL
T/96/1603100	160/33	1996	LTL
T/96/1003187	100/33	1996	LTL
T/96/1603038	160/33	1996	LTL
T/96/1003182	100/33	1996	LTL
T/96/2503013	250/33	1996	LTL
T/96/1603141	160/33	1996	LTL
T/95/2503156	250/33	1996	LTL
T/96/2503023	250/33	1996	LTL
T/96/1603117	160/33	1996	LTL
T/95/1603195	160/33	1996	LTL
T/96/1003055	100/33	1996	LTL
T/96/2503022	250/33	1996	LTL
T/96/6303001	630/33	1996	LTL
T/96/1003051	100/33	1996	LTL
T/96/1603017	160/33	1996	LTL
T/96/1003025	100/33	1996	LTL
T/96/I8001006	800/11	1996	LTL
T/95/1003276	100/33	1996	LTL
T/96/1603066	160/33	1996	LTL
T/96/2503020	250/33	1996	LTL
T/95/1603176	160/33	1996	LTL
T/96/2503033	250/33	1996	LTL
T/96/1601030	160/11	1996	LTL
T/95/2503119	250/33	1996	LTL
T/96/1603002	160/33	1996	LTL
T/96/2501001	250/11	1996	LTL
T/96/2503008	250/33	1996	LTL
T/96/2503028	250/11	1996	LTL
T/96/2501041	250/11	1996	LTL
T/95/1003298	100/33	1996	LTL
T/95/2501097	250/11	1996	LTL
T/95/4003051	400/33	1996	LTL
T/96/1601060	160/11	1996	LTL
T/96/4003005	400/33	1996	LTL
T/96/1001008	100/11	1996	LTL
T/96/1603041	160/33	1996	LTL
T/96/1603032	160/33	1996	LTL
T/95/1603025	160/33	1996	LTL
T/95/2503134	250/33	1996	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/96/1001046	100/11	1996	LTL
T/96/1601031	160/11	1996	LTL
T/95/2503144	250/33	1996	LTL
T/96/1603012	160/33	1996	LTL
T/95/2503121	250/33	1996	LTL
T/96/1603016	160/33	1996	LTL
T/95/1003253	100/33	1996	LTL
T/95/1003306	100/33	1996	LTL
T/96/1003042	100/33	1996	LTL
T/96/1001034	100/11	1996	LTL
T/96/1603001	160/33	1996	LTL
T/95/1601097	160/11	1996	LTL
T/96/1003121	100/33	1996	LTL
T/96/1603042	160/33	1996	LTL
T/95/1601090	160/11	1996	LTL
T/95/6301021	630/11	1996	LTL
T/96/1603059	160/33	1996	LTL
T/96/1003120	100/33	1996	LTL
T/96/1003191	100/33	1996	LTL
T/96/1003133	100/33	1996	LTL
T/96/1003037	100/33	1996	LTL
T/96/1603077	160/33	1996	LTL
T/96/1603040	160/33	1996	LTL
T96/1003197	100/33	1996	LTL
T95/1003326	100/33	1996	LTL
T96/1003148	100/33	1996	LTL
T96/4003025	400/33	1996	LTL
T/96/1003119	100/33	1996	LTL
T/96/1003080	100/33	1996	LTL
T/95/1001097	100/11	1996	LTL
T/96/1003078	100/33	1996	LTL
T/96/1603098	160/33	1996	LTL
T/96/1603009	160/33	1996	LTL
T/96/1603057	160/33	1996	LTL
T/96/1003086	100/33	1996	LTL
T/95/1003309	100/33	1996	LTL
T/96/1603004	160/33	1996	LTL
T/96/1003193	100/33	1996	LTL
T/95/1603198	160/33	1996	LTL
T/96/1603033	160/33	1996	LTL
T/95/1003320	100/33	1996	LTL
T/95/1603196	160/33	1996	LTL
T/95/1003274	100/33	1996	LTL
T/96/1603109	160/33	1996	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/96/1603031	160/33	1996	LTL
T/95/1003307	100/33	1996	LTL
T96/1003180	100/33	1996	LTL
T96/1001016	100/33	1996	LTL
T/95/1003295	100/33	1996	LTL
T/96/1001052	100/11	1996	LTL
T/96/1003094	100/33	1996	LTL
T/96/2503034	250/33	1996	LTL
T/96/1003151	100/33	1996	LTL
T/96/1003195	100/33	1996	LTL
T/96/1603107	160/33	1996	LTL
T/95/1003277	100/33	1996	LTL
T/95/1603192	160/33	1996	LTL
T/96/1603053	160/33	1996	LTL
T/96/2503009	250/33	1996	LTL
T/96/1001060	100/11	1996	LTL
T/96/20003001	2000	1996	LTL
T/95/1003324	100/33	1996	LTL
T/95/2503159	250/33	1996	LTL
T/96/4001008	400/11	1996	LTL
T/95/1001095	100/11	1996	LTL
T/95/10003014	1000/33	1996	LTL
T/96/1603068	160/33	1996	LTL
T/96/6303012	630/33	1996	LTL
T/95/10003021	1000/33	1996	LTL
T/96/6303041	630/33	1996	LTL
T/96/6303003	630/33	1996	LTL
T96/1601023	160/11	1996	LTL
T86/7054	100/33	1996	LTL
T95/2503148	250/33	1996	LTL
6502/4	100/33	1996	Other
T96/1003159	100/33	1996	LTL
T/96/1003035	100/33	1996	LTL
T96/1003063	100/33	1996	LTL
T96/1603079	160/33	1996	LTL
T/95/2503131	250/33	1996	LTL
T/96/1003046	100/33	1996	LTL
T/96/10003009	1000/33	1996	LTL
T/96/10003010	1000/33	1996	LTL
T/97/1003213	100/33	1997	LTL
T/97/630100	630/11	1997	LTL
T/97/1603144	160/33	1997	LTL
T/97/1603174	160/33	1997	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/97/3723	250/33	1997	LTL
T/97/1603094	160/33	1997	LTL
T/96/1603167	100/33	1997	LTL
T/96/1603176	160/33	1997	LTL
T/96/1603179	160/33	1997	LTL
T/96/1003134	100/33	1997	LTL
T/96/1603183	160/33	1997	LTL
T/97/1003127	100/33	1997	LTL
T/97/1003118	100/33	1997	LTL
T/97/1003101	100/33	1997	LTL
T/96/1003206	100/33	1997	LTL
T/97/1003180	100/33	1997	LTL
T/97/1003154	100/33	1997	LTL
T/96/1003224	100/33	1997	LTL
T/97/1003126	100/33	1997	LTL
T/97/1603171	160/33	1997	LTL
T/97/1603178	160/33	1997	LTL
T/96/1003143	100/33	1997	LTL
T/97/2503009	250/33	1997	LTL
T/97/1603134	160/33	1997	LTL
T/97/1603115	160/33	1997	LTL
T/97/1603070	160/33	1997	LTL
T/97/1603112	160/33	1997	LTL
T/97/I8001003	800/11	1997	LTL
T/96/1603064	160/33	1997	LTL
T/97/2503032	250/33	1997	LTL
T/97/1603028	160/33	1997	LTL
T/97/1003226	100/33	1997	LTL
T/97/1601002	160/11	1997	LTL
T/97/2501019	250/11	1997	LTL
T/96/1603137	160/33	1997	LTL
T/96/1603152	160/33	1997	LTL
T/96/1603131	160/33	1997	LTL
T/97/1603148	160/11	1997	LTL
T/97/1001032	100/11	1997	LTL
T/97/1001023	100/11	1997	LTL
T/96/1601119	160/11	1997	LTL
T/97/01001039	100/11	1997	LTL
T/97/1001022	100/11	1997	LTL
T/96/6303044	630/33	1997	LTL
T/97/1001005	100/11	1997	LTL
T/97/1603165	160/33	1997	LTL
T/96/1601138	160/11	1997	LTL
T/97/1601030	160/11	1997	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/97/01001057	100/11	1997	LTL
T/97/1601032	160/11	1997	LTL
T/97/1003134	100/33	1997	LTL
T/97/01001040	100/11	1997	LTL
T/97/8792	100/33	1997	LTL
T96/1003226	100/33	1997	LTL
T97/1003036	100/33	1997	LTL
T97/1001030	100/11	1997	LTL
T/97/01603199	160/33	1997	LTL
T/97/1003143	100/33	1997	LTL
T/97/01603198	160/33	1997	LTL
T/97/1603062	160/33	1997	LTL
T/97/1603149	160/33	1997	LTL
T/97/1003015	100/33	1997	LTL
T/97/1003235	100/33	1997	LTL
T/97/1003211	100/33	1997	LTL
T/97/1603043	160/33	1997	LTL
T/97/1603136	160/33	1997	LTL
T/97/1601015	160/11	1997	LTL
T/97/1603111	160/33	1997	LTL
T/97/1003055	100/33	1997	LTL
T/97/1003014	100/33	1997	LTL
T/97/1003034	100/33	1997	LTL
T/97/1603175	160/33	1997	LTL
T/97/1003055	100/33	1997	LTL
T/96/1003228	100/33	1997	LTL
T/97/1003222	100/33	1997	LTL
T/97/1603105	160/33	1997	LTL
T/97/1603017	160/33	1997	LTL
T/97/1003056	100/33	1997	LTL
T/97/8003004	800/33	1997	LTL
T/97/10003011	1000/33	1997	LTL
T/97/2503010	250/33	1997	LTL
T/97/1603058	160/33	1997	LTL
T/97/1003179	100/33	1997	LTL
T/96/1603070	160/33	1997	LTL
T/97/1603165	160/33	1997	LTL
T/97/1601019	160/11	1997	LTL
T/97/1003050	100/33	1997	LTL
T/97/1603029	160/33	1997	LTL
T/97/2503067	250/33	1997	LTL
T/97/1003027	100/33	1997	LTL
T/97/2503004	250/33	1997	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/97/01003245	100/33	1997	LTL
T/97/1603065	160/33	1997	LTL
T/97/1603044	160/33	1997	LTL
T/96/6303040	630/33	1997	LTL
T/96/10001016	1000/11	1997	LTL
T97/10003010	1000/33	1997	LTL
T96/2503048	250/33	1997	LTL
T97/2503024	250/33	1997	LTL
T97/4003021	400/33	1997	LTL
T97/1003003	100/33	1997	LTL
T96/6303028	630/33	1997	LTL
T97/1603042	160/33	1997	LTL
T97/1603053	160/33	1997	LTL
T/96/1603136	160/33	1997	LTL
T/97/1603126	160/33	1997	LTL
T/97/1603084	160/33	1997	LTL
T/97/1603128	160/33	1997	LTL
T/97/1003068	100/33	1997	LTL
T/97/4003022	400/33	1997	LTL
T/97/1003025	100/33	1997	LTL
T/96/2501132	250/11	1997	LTL
T/96/1003247	100/33	1997	LTL
T/96/4003044	400/33	1997	LTL
T/96/1603113	160/33	1997	LTL
T/97/4001001	400/11	1997	LTL
T/96/4003045	400/33	1997	LTL
T/96/1603147	160/33	1997	LTL
T/97/1003171	100/33	1997	LTL
T/97/1003145	100/33	1997	LTL
T/95/253001	25/33	1997	LTL
T/97/1603156	160/33	1997	LTL
T/98/01603187	160/33	1998	LTL
T/97/02503107	250/33	1998	LTL
T/97/01003288	100/33	1998	LTL
T/98/01003032	100/33	1998	LTL
T/98/01003243	100/33	1998	LTL
T/98/U01003391	100/33	1998	LTL
T/98/01003220	100/33	1998	LTL
T/98/01003171	100/33	1998	LTL
T/98/02503032	250/33	1998	LTL
T/98/01603069	160/33	1998	LTL
T/98/01603011	160/33	1998	LTL
T/98/01003246	100/33	1998	LTL
T/98/01603051	160/33	1998	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/98/01003064	100/33	1998	LTL
T/98/U01003330	100/33	1998	LTL
T/98/01603002	160/33	1998	LTL
T/98/01003244	100/33	1998	LTL
T/98/01603145	160/33	1998	LTL
T/98/01003078	100/33	1998	LTL
T/98/01003116	100/33	1998	LTL
T/98/01003066	100/33	1998	LTL
T/98/01603106	160/33	1998	LTL
T/97/01603210	160/33	1998	LTL
T/98/01603148	160/33	1998	LTL
T/98/02503095	250/33	1998	LTL
T/98/04003011	400/33	1998	LTL
T/98/U01603218	160/33	1998	LTL
T/98/U01603267	160/33	1998	LTL
T/97/02503103	250/33	1998	LTL
T/98/U02503139	250/33	1998	LTL
T/97/02503099	250/33	1998	LTL
T/98/02503035	250/33	1998	LTL
T/98/01003062	100/33	1998	LTL
T/97/01603242	160/33	1998	LTL
T/98/1003069	100/33	1998	LTL
T/97/011603216	160/33	1998	LTL
T/06/U01603001	160/33	1998	LTL
T/98/U0/1603228	160/33	1998	LTL
T/98/2503009	250/33	1998	LTL
T/98/01003136	100/33	1998	LTL
T/98/01001026	100/11	1998	LTL
T/98/01003091	100/33	1998	LTL
T/98/01603185	160/33	1998	LTL
T/93/1003511	100/33	1998	LTL
T/98/01003039	100/33	1998	LTL
T/98/02503074	250/33	1998	LTL
T/98/01003139	100/33	1998	LTL
T/97/01601090	160/11	1998	LTL
T/98/02501010	250/11	1998	LTL
T/98/04001001	400/11	1998	LTL
T/97/04001031	400/11	1998	LTL
T/98/01003158	100/33	1998	LTL
T/97/01003316	100/33	1998	LTL
T/97/01003305	100/33	1998	LTL
T/97/01001048	100/11	1998	LTL
T/98/U01603076	160/33	1998	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/98/01003182	100/33	1998	LTL
T/98/1603142	160/33	1998	LTL
T/98/U01003279	100/33	1998	LTL
T/98/02503092	250/33	1998	LTL
T/98/01001013	100/11	1998	LTL
T/98/U02501056	250/11	1998	LTL
T/98/01003175	100/33	1998	LTL
T/97/01603259	160/33	1998	LTL
T/98/01001024	100/11	1998	LTL
T/98/06301002	630/11	1998	LTL
T/98/02503057	250/33	1998	LTL
T/98/1603028	160/33	1998	LTL
T/98/U01003278	100/33	1998	LTL
T/98/02501012	250/11	1998	LTL
T/98/U01603203	160/33	1998	LTL
T/99/U02503049	250/33	1998	LTL
T/97/04001028	400/11	1998	LTL
T/98/U01001053	100/11	1998	LTL
T/98/01001025	100/11	1998	LTL
T/97/01003303	100/33	1998	LTL
T/98/01601031	160/11	1998	LTL
T/97/1003144	100/33	1998	LTL
T/98/U01603281	160/33	1998	LTL
T/98/U01003236	100/33	1998	LTL
T/98/01003072	100/33	1998	LTL
T/98/1603194	160/33	1998	LTL
T97/02503115	250/33	1998	LTL
T98/U01001062	100/11	1998	LTL
T/98/01601030	160/11	1998	LTL
T/98/01003117	100/33	1998	LTL
T/98/U01603144	160/33	1998	LTL
T/97/01603251	160/33	1998	LTL
T/97/01603234	160/33	1998	LTL
T/98/01003135	100/33	1998	LTL
T/98/01603053	160/33	1998	LTL
T/98/01603085	160/33	1998	LTL
T/98/01603166	160/33	1998	LTL
T/98/02503058	250/33	1998	LTL
T/98/01603163	160/33	1998	LTL
T/98/01003201	100/33	1998	LTL
T/98/U01001059	100/11	1998	LTL
T/98/01001052	100/11	1998	LTL
T/98/U01001055	100/11	1998	LTL
T/98/06303036	630/33	1998	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/98/U01001057	100/11	1998	LTL
T/98/01603161	160/33	1998	LTL
T/98/U01603260	160/33	1998	LTL
T/98/U01003353	100/33	1998	LTL
T/98/01603162	160/33	1998	LTL
T98/01603018	160/33	1998	LTL
T98/01003018	100/33	1998	LTL
T98/01003076	100/33	1998	LTL
T98/01003179	100/33	1998	LTL
T98/01003242	100/33	1998	LTL
T/98/02501032	250/11	1998	LTL
T/98/1003016	100/33	1998	LTL
T/98/1003075	100/33	1998	LTL
T/98/1003218	100/33	1998	LTL
T/98/U01003393	100/33	1998	LTL
T/98/01003047	100/33	1998	LTL
T/97/02503101	250/33	1998	LTL
T/98/01003132	100/33	1998	LTL
T/98/02503071	250/33	1998	LTL
T/98/01003071	100/33	1998	LTL
T/97/01003295	100/33	1998	LTL
T/98/01003134	100/33	1998	LTL
T/98/01603030	160/33	1998	LTL
T/97/01603240	160/33	1998	LTL
T/98/10003006	1000/33	1998	LTL
T/98/1603017	160/33	1998	LTL
T/98/01603197	160/33	1998	LTL
T/98/01603036	160/33	1998	LTL
T/98/U06303032	630/33	1998	LTL
T/98/02503096	250/33	1998	LTL
T/98/U02503135	250/33	1998	LTL
T/98/01603027	160/33	1998	LTL
T/98/U01603289	160/33	1998	LTL
T/98/10001012	1000/11	1998	LTL
T/97/1603268	160/33	1998	LTL
T/98/02503021	250/33	1998	LTL
T/97/06301019	630/11	1998	LTL
T/97/01603225	160/33	1998	LTL
T/98/U02503146	250/33	1998	LTL
T/98/02501050	250/11	1998	LTL
T/98/U01603309	160/33	1998	LTL
T/98/01003056	100/33	1998	LTL
T/97/08001012	800/11	1998	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T98/u01003343	100/33	1998	LTL
T98/02503038	250/33	1998	LTL
T98/02503076	250/33	1998	LTL
T98/02503048	250/33	1998	LTL
T98/u01003342	100/33	1998	LTL
T98/u02503119	250/33	1998	LTL
T98/01603104	160/33	1998	LTL
T/98/1001033	100/11	1998	LTL
T/98/U02503131	250/33	1998	LTL
T/8/02501039	250/11	1998	LTL
T/98/01603175	160/33	1998	LTL
T/98/01603070	160/33	1998	LTL
T/98/01003249	100/33	1998	LTL
T/98/01603188	160/33	1998	LTL
T/98/06303016	630/33	1998	LTL
T/97/02501043	250/11	1998	LTL
T/98/01601007	160/11	1998	LTL
T/98/01601012	160/11	1998	LTL
T/97/01003311	100/33	1998	LTL
T/98/01603131	160/33	1998	LTL
T/97/1003244	100/33	1998	LTL
T/98/01603144	160/33	1998	LTL
T/98/01603183	160/33	1998	LTL
T/99/U01603317	160/33	1999	LTL
T/99/U01603132	160/33	1999	LTL
T/99/U01603128	160/33	1999	LTL
T/99/U01603045	160/33	1999	LTL
T/99U03493	100/33	1999	LTL
T/99/1003076	100/33	1999	LTL
T/99/U01003231	100/33	1999	LTL
T/99/U02503171	250/33	1999	LTL
T/99/U01603187	160/33	1999	LTL
T/99/U02503147	250/33	1999	LTL
T/99/U01003145	100/33	1999	LTL
T/99/U02503294	250/33	1999	LTL
T/99/U02503269	250/33	1999	LTL
T/99/U06303020	630/33	1999	LTL
T/99/U01603592	160/33	1999	LTL
T/99/U01003402	100/33	1999	LTL
T/99/U01003535	100/33	1999	LTL
T/98/U01003426	100/33	1999	LTL
T/99/U01603553	160/33	1999	LTL
T/99/U01603507	160/33	1999	LTL
T/99/U01603217	160/33	1999	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
7791	100/33	1999	LTL
T/99/U01003082	100/33	1999	LTL
T/99/U04003037	400/33	1999	LTL
T/99/U01003428	100/33	1999	LTL
T/99/U01603290	160/33	1999	LTL
T/99/U01003499	100/33	1999	LTL
T/99/U01603573	160/33	1999	LTL
T/99/1603543	160/33	1999	LTL
T/99/U08003006	800/33	1999	LTL
T/99/U01003130	100/33	1999	LTL
T/99/U01003252	100/33	1999	LTL
T/99/U01003219	100/33	1999	LTL
T/99/U01603251	160/33	1999	LTL
T/99/U01603142	160/33	1999	LTL
T/99/U01003210	100/33	1999	LTL
T/99/U02503064	250/33	1999	LTL
T/99/U02501026	250/11	1999	LTL
T/99/U01603392	160/33	1999	LTL
T/99/U01603073	160/33	1999	LTL
T/99/U0011003202	100/33	1999	LTL
T/98/U04001020	400/11	1999	LTL
T/99/U0/1601043	160/11	1999	LTL
T/99/U01601065	160/11	1999	LTL
T/99/U01003003	100/33	1999	LTL
T/99/U01003122	100/33	1999	LTL
T/99/U01003090	100/33	1999	LTL
T/99/U02503146	250/33	1999	LTL
T/99/U01001026	100/11	1999	LTL
T/99/U01003128	100/33	1999	LTL
T/99/U01001042	100/11	1999	LTL
T/99/U06301020	630/11	1999	LTL
T/99/U01001011	100/11	1999	LTL
T/99/U06303034	630/33	1999	LTL
T/99/U01001044	100/11	1999	LTL
T/99/U01603102	160/33	1999	LTL
T/99/U01001021	100/11	1999	LTL
T/99/U02501025	250/11	1999	LTL
T/99/U01003573	100/33	1999	LTL
T/99/U01603260	160/33	1999	LTL
T/99/U01603177	160/33	1999	LTL
T/99/U02503237	250/33	1999	LTL
T/99/U01001061	100/11	1999	LTL
T/99/U01003049	100/33	1999	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/99/U01603156	160/33	1999	LTL
T99/U01002063	100/33	1999	LTL
T99/U01603365	160/33	1999	LTL
T99/U02503015	250/33	1999	LTL
T99/U01603090	160/33	1999	LTL
T99/U01603089	160/33	1999	LTL
T/99/U02501022	250/11	1999	LTL
T/99/U01601001	160/11	1999	LTL
T/99/U01603335	160/33	1999	LTL
T/99/U01603059	160/33	1999	LTL
T/99/U01603558	160/33	1999	LTL
T/99/U01603223	160/33	1999	LTL
T/99/U01003431	100/33	1999	LTL
T/99/U01003015	100/33	1999	LTL
T/99/U01603422	160/33	1999	LTL
T/99/U01003167	100/33	1999	LTL
T/99/U01003163	100/33	1999	LTL
T/99/U04003019	400/33	1999	LTL
T/99/U01603429	160/33	1999	LTL
T/99/U01003482	100/33	1999	LTL
T/99/U01003181	100/33	1999	LTL
T/99/U01003292	100/33	1999	LTL
T/99/U01603411	160/33	1999	LTL
T/99/U01603111	160/33	1999	LTL
T/99/U01003207	100/33	1999	LTL
T/99/U01003440	100/33	1999	LTL
T/99/U01001032	100/11	1999	LTL
T/99/U01603085	160/33	1999	LTL
T/99/U01603130	160/33	1999	LTL
T/99/U01603492	160/33	1999	LTL
T/99/U01003095	100/33	1999	LTL
T/99/U04001018	400/11	1999	LTL
T/99/U01003316	100/33	1999	LTL
T/99/U01603028	160/33	1999	LTL
T/99/U01603349	160/33	1999	LTL
T/99/U04001008	400/11	1999	LTL
T/99/U01603077	160/33	1999	LTL
T/99/U01003616	100/33	1999	LTL
T/99/U04003026	400/33	1999	LTL
T/99/U06301025	630/11	1999	LTL
T/99/U01003606	100/33	1999	LTL
T/99/U01003251	100/33	1999	LTL
T/99/U01603409	160/33	1999	LTL
T/99/U01603516	160/33	1999	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/99/U01003462	100/33	1999	LTL
T/99/U01603105	160/33	1999	LTL
T/99/U200003101	2000	1999	LTL
T/99/U02503144	250/33	1999	LTL
T/98/U10001011	1000/11	1999	LTL
T/99/U01601023	160/11	1999	LTL
T/99/U02503299	250/33	1999	LTL
T/99/U02503122	250/33	1999	LTL
T/99/U02503178	250/33	1999	LTL
T/99/U01603358	160/33	1999	LTL
T/99/U01603262	160/33	1999	LTL
T/99/U01603347	160/33	1999	LTL
T/99/U01603291	160/33	1999	LTL
T/99/U010003026	1000/33	1999	LTL
T/99/U01603082	160/33	1999	LTL
T/99/6303008	630/33	1999	LTL
T/99/U01003302	100/33	1999	LTL
T/99/U01601015	160/11	1999	LTL
T/99/U01603191	160/33	1999	LTL
T/99/U01603024	160/33	1999	LTL
T/96/6301019	630/11	1999	LTL
T/99/U01003034	100/33	1999	LTL
T/99/U01603308	160/33	1999	LTL
T/99/U01603284	160/33	1999	LTL
T/99/U01603350	160/33	1999	LTL
T/99/U01601026	160/11	1999	LTL
T/99/U4003051	400/33	1999	LTL
T/99/U10001013	1000/11	1999	LTL
T/93/U010001027	1000/11	1999	LTL
T/99/U02503024	250/33	1999	LTL
T/99/U01001016	100/11	1999	LTL
T/99/U08003008	800/33	1999	LTL
T99/u04003009	400/33	1999	LTL
T99/u02503056	250/33	1999	LTL
T/99/U01601021	160/11	1999	LTL
T/99/U01001006	100/11	1999	LTL
T99/u01603405	160/33	1999	LTL
T99/u01603305	160/33	1999	LTL
T99/1603304	160/33	1999	LTL
T99/u02503173	250/33	1999	LTL
T98/u01003424	100/33	1999	LTL
T/99/U01603285	160/33	1999	LTL
T/99/U01603040	160/33	1999	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/99/U01603295	160/33	1999	LTL
T/99/U01001015	100/11	1999	LTL
T/99/U01603331	160/33	1999	LTL
T/99/2503220	250/33	1999	LTL
T/99/U01603258	160/33	1999	LTL
T/99/U01603038	160/33	1999	LTL
T/99/U02501004	250/11	1999	LTL
T/99/U02503023	250/33	1999	LTL
T/99/U01601006	160/11	1999	LTL
T/99/U01003502	100/33	1999	LTL
T/00/U02503075	250/33	2000	LTL
T/00/U01003245	100/33	2000	LTL
T/00/U01603086	160/33	2000	LTL
T/00/U01603245	160/33	2000	LTL
T/00/U01003194	100/33	2000	LTL
T/00/U01003201	100/33	2000	LTL
T/00/U01003094	100/33	2000	LTL
T/00/U01603200	160/33	2000	LTL
T/00/U01603289	160/33	2000	LTL
T/00/U01603018	160/33	2000	LTL
T/00/U01603087	160/33	2000	LTL
T/00/U01003184	100/33	2000	LTL
T/00/U02503122	250/33	2000	LTL
T/00/U01603164	160/33	2000	LTL
T/00/U01003217	160/33	2000	LTL
T/00/U01603426	160/33	2000	LTL
T/00/U00535011	5//33	2000	LTL
T/00/U01603213	160/33	2000	LTL
T/00/U01003010	100/33	2000	LTL
T/00/U01601012	160/11	2000	LTL
T/00/U04003064	400/33	2000	LTL
T/00/U01003379	100/33	2000	LTL
T/00/U01003259	100/33	2000	LTL
T/00/U01003051	100/33	2000	LTL
T/00/U01003381	100/33	2000	LTL
T/00/U04003053	400/33	2000	LTL
T/00/U01003282	100/33	2000	LTL
T/00/U01003388	100/33	2000	LTL
T/00/U02503211	250/33	2000	LTL
T/00/U02503174	250/33	2000	LTL
T/99/U01003618	100/33	2000	LTL
T/00/U02503076	250/33	2000	LTL
T/00/UO2503099	250/33	2000	LTL
T/00/U01601016	160/11	2000	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/00/U01601017	160/11	2000	LTL
T/00/U01603082	160/33	2000	LTL
T/00/U01003255	100/33	2000	LTL
T/00/U01603214	160/33	2000	LTL
T/00/U01603251	160/33	2000	LTL
T/00/U01003355	100/33	2000	LTL
T/00/U01003167	100/33	2000	LTL
T/00/U01003384	100/33	2000	LTL
T/00/U01003441	100/33	2000	LTL
T/00/U01003436	100/33	2000	LTL
T/00/U01003444	100/33	2000	LTL
T/00/U01603065	160/33	2000	LTL
T/00/U01003032	100/33	2000	LTL
T/00/U01603442	160/33	2000	LTL
T/00/U01603089	160/33	2000	LTL
T/00/U01603109	160/33	2000	LTL
T/99/U01603593	160/33	2000	LTL
T/00/U01003041	100/33	2000	LTL
T/00/U01601010	160/11	2000	LTL
T/00/U01603448	160/33	2000	LTL
T/00/U01003435	100/33	2000	LTL
T/00/U01603034	160/33	2000	LTL
T/00/U01601011	160/11	2000	LTL
T/00/U01603147	160/33	2000	LTL
T/00/U0/1603399	160/33	2000	LTL
T00/U01003079	100/33	2000	LTL
T00/U01003268	100/33	2000	LTL
T/99/U06303027	630/33	2000	LTL
T/00/U01001002	100/11	2000	LTL
T/00/U01003802	100/33	2000	LTL
T/00/U010083914	100/33	2000	LTL
T/00/U01003405	100/33	2000	LTL
T/00/U01603010	160/33	2000	LTL
T/00/U01003183	100/33	2000	LTL
T/00/U10001019	1000/11	2000	LTL
T/00/U06301036	630/11	2000	LTL
T/00/U01603445	160/33	2000	LTL
T/00/U01603368	160/33	2000	LTL
T/00/U01603365	160/33	2000	LTL
T/00/U01603408	160/33	2000	LTL
T/00/U01603060	160/33	2000	LTL
T/00/U01603369	160/33	2000	LTL
T00/u01003248	100/33	2000	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T00/u01003295	100/33	2000	LTL
T/00/U01603210	160/33	2000	LTL
T/00/U01603168	160/11	2000	LTL
T/00/U01603141	160/33	2000	LTL
T/00/U01603406	160/33	2000	LTL
T/00/U01003083	100/33	2000	LTL
T/00/U01603281	160/33	2000	LTL
T/00/U01603160	160/33	2000	LTL
T/00/U01603379	160/33	2000	LTL
T/00/U01603417	160/33	2000	LTL
T/00/U04003022	400/33	2000	LTL
T/00/U01603267	160/33	2000	LTL
T/00/U01003370	100/33	2000	LTL
T/00/U01603222	160/33	2000	LTL
T/00/U01003026	100/33	2000	LTL
T/01/U01603014	160/33	2001	LTL
T/01/U01603271	160/33	2001	LTL
T/01/U01603351	160/33	2001	LTL
T/01/U01003230	100/33	2001	LTL
T/01/U01603235	160/33	2001	LTL
T/01/U01603037	160/33	2001	LTL
T/01/U04003026	400/33	2001	LTL
T/01/U01603170	160/33	2001	LTL
T/01/U01603330	160/33	2001	LTL
T/01/U04003012	400/33	2001	LTL
T/01/U01003231	100/33	2001	LTL
T/01/U01603137	160/33	2001	LTL
T/01/U01003234	100/33	2001	LTL
T/01/U01003065	100/33	2001	LTL
T/01/U01003170	100/33	2001	LTL
T/01/U01003249	100/33	2001	LTL
T/01/U01003302	100/33	2001	LTL
T/01/U02503055	250/33	2001	LTL
T/01/U02501054	250/11	2001	LTL
T/01/U01003091	100/33	2001	LTL
T/01/U01003274	100/33	2001	LTL
T/01/U01603313	160/33	2001	LTL
T/01/U01603278	160/33	2001	LTL
T01/U02503095	100/33	2001	LTL
T/01/U01603224	160/33	2001	LTL
T/01/U04003023	400/33	2001	LTL
T/01/U01003056	100/33	2001	LTL
T/01/U01603117	160/33	2001	LTL
T/01/U01003088	100/33	2001	LTL

Serial No	**kVA/kV**	**Manufactured year**	**Manufacturer**
T/01/U02503073	250/33	2001	LTL
T/01/U02503043	250/33	2001	LTL
T/01/U1603356	160/33	2001	LTL
T01/u010001006	1000/11	2001	LTL
T/01/U01603035	160/33	2001	LTL
T/01/U01603334	160/33	2001	LTL
T/02/U04003031	400/33	2002	LTL
T/02/U06303015	630/33	2002	LTL
T/02/U01603095	160/33	2002	LTL
T/02/U01003470	100/33	2002	LTL
T/02/U01003100	100/33	2002	LTL
T/02/U01603252	160/33	2002	LTL
T/02/U01003336	100/33	2002	LTL
T/02/U01003469	100/33	2002	LTL
T/02/U01003403	100/33	2002	LTL
T/02/U01003537	100/33	2002	LTL
T/02/U01003346	100/33	2002	LTL
T/02/U01003681	100/33	2002	LTL
T/02/U01003330	100/33	2002	LTL
T/02/U01603128	160/33	2002	LTL
T/02/U01003612	100/33	2002	LTL
T/02/U01003345	100/33	2002	LTL
T/02/U01003611	100/33	2002	LTL
T/02/U01603136	160/33	2002	LTL
T/02/U02503114	250/33	2002	LTL
T/02/U01003350	100/33	2002	LTL
T/02/U01603149	160/33	2002	LTL
T/02/U01003086	100/33	2002	LTL
T/02/U01003553	100/33	2002	LTL
T/02/U01003056	100/33	2002	LTL
T/02/U01603125	160/33	2002	LTL
T/02/U01603018	160/33	2002	LTL
T/02/U01003292	100/33	2002	LTL
T/02/U02503073	250/33	2002	LTL
T/02/U01003163	100/33	2002	LTL
T/02/U04003009	400/33	2002	LTL
T/02/U01003446	100/33	2002	LTL
T/02/U01003124	100/33	2002	LTL
T/02/U01603155	160/33	2002	LTL
T/02/U01603172	160/33	2002	LTL
T/02/U01003495	100/33	2002	LTL
T/02/U08003001	800/33	2002	LTL
T/02/U01003130	100/33	2002	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/02/U01603330	160/33	2002	LTL
T/02/U01003444	100/33	2002	LTL
T/02/U01003309	100/33	2002	LTL
T/02/U01003096	100/33	2002	LTL
T/01/U06303028	630/33	2002	LTL
T02/U01003254	100/33	2002	LTL
T02/U01003228	100/33	2002	LTL
T/02/U01003287	100/33	2002	LTL
T/02/U01003493	100/33	2002	LTL
T/02/U04003019	400/33	2002	LTL
T/02/U02501014	250/11	2002	LTL
T/04/U010030118	100/33	2002	LTL
T/02/U01003383	100/33	2002	LTL
T02/U01003457	100/33	2002	LTL
T02/U01003316	100/33	2002	LTL
T/02/U01603028	160/33	2002	LTL
T/03/U01003222	100/33	2002	LTL
T/02/6303003	630/33	2002	LTL
T/03/U01003110	100/33	2002	LTL
T/02/U02503035	250/33	2002	LTL
T/02/U01003191	100/33	2002	LTL
T/02/U01003313	100/33	2002	LTL
T/02/U02503077	250/33	2002	LTL
T/01/U02503112	250/33	2002	LTL
T/02/U1603287	160/33	2002	LTL
T/02/U01003561	100/33	2002	LTL
T/02/U01603073	160/33	2002	LTL
T/02/U02503041	250/33	2002	LTL
T02/u01603301	160/33	2002	LTL
T02/u01603301	160/33	2002	LTL
T02/u06303020	630/33	2002	LTL
T/02/U01603037	160/33	2002	LTL
T/02/U01603063	160/33	2002	LTL
T/02/U01003401	100/33	2002	LTL
T/02/U01003314	100/33	2002	LTL
T/03/U01003007	100/33	2003	LTL
T/03/U01003292	100/33	2003	LTL
T/03/U01603320	160/33	2003	LTL
T/02/UO1003084	100/33	2003	LTL
T/03/U01003081	100/33	2003	LTL
T/03/U04003011	400/33	2003	LTL
T/03/U01003309	100/33	2003	LTL
T/03/U01003297	100/33	2003	LTL
T/03/U01003220	100/33	2003	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/02/U01003673	100/33	2003	LTL
T/03/U01003259	100/33	2003	LTL
T/03/U01003062	100/33	2003	LTL
T/03/U01003295	100/33	2003	LTL
T/03/U01003135	100/33	2003	LTL
T/03/U01003261	100/33	2003	LTL
T/03/U01603299	160/33	2003	LTL
T/02/U01003655	100/33	2003	LTL
T/03/U02503132	250/33	2003	LTL
T/03/U01603245	160/33	2003	LTL
T/03/U01003551	100/33	2003	LTL
T/03/U01603043	160/33	2003	LTL
T/03/U06301012	630/11	2003	LTL
T/03/U01003415	100/33	2003	LTL
T/03/U01601130	160/11	2003	LTL
T/03/U01003207	100/33	2003	LTL
T/03/U01603235	160/11	2003	LTL
T/03/U01003202	100/33	2003	LTL
T/03/U04003010	400/33	2003	LTL
T/03/U01603047	160/33	2003	LTL
T/02/U010003024	1000/33	2003	LTL
T/03/U01603280	160/33	2003	LTL
T/03/U01603277	160/33	2003	LTL
T/03/U01603271	160/33	2003	LTL
T/02/U01003656	100/33	2003	LTL
T/03/U01603075	160/33	2003	LTL
T/03/U01003103	100/33	2003	LTL
T/03/U01001012	100/11	2003	LTL
T/03/U01003460	100/33	2003	LTL
T/03/U01603153	160/33	2003	LTL
T03/U01003421	100/33	2003	LTL
T/02/U01003575	100/33	2003	LTL
T/03/U06303004	630/33	2003	LTL
T/03/U01003058	100/33	2003	LTL
T/02/U01003650	100/33	2003	LTL
T/03/U01001090	100/11	2003	LTL
T/03/U01003343	100/33	2003	LTL
T/02/U01003621	100/33	2003	LTL
T/02/U01003676	100/33	2003	LTL
T/03/U02501049	250/11	2003	LTL
T/02/U01003586	100/33	2003	LTL
T/02/U01003565	100/33	2003	LTL
T/03/U01003137	100/33	2003	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/03/U01003080	100/33	2003	LTL
T/03/U01603078	160/33	2003	LTL
T/03/U01003576	100/33	2003	LTL
T/02/U01003124	100/33	2003	LTL
T/03/U01603127	160/33	2003	LTL
T/03/U01001096	100/11	2003	LTL
T/03/U04003040	400/33	2003	LTL
T/02/U01003636	100/33	2003	LTL
T/03/U01003512	100/33	2003	LTL
T/03/U01003524	100/33	2003	LTL
T/03/U01003199	100/33	2003	LTL
T/03/U01603306	160/33	2003	LTL
T/03/U02503050	250/33	2003	LTL
T/03/U02503141	250/33	2003	LTL
T/03/U01603300	160/33	2003	LTL
T02/U01003678	100/33	2003	LTL
T/03/U01003042	100/33	2003	LTL
T/03/U01603138	160/33	2003	LTL
T/03/U01003233	100/33	2003	LTL
T/03/U01603204	160/33	2003	LTL
T/03/U01003495	100/33	2003	LTL
T/03/U01603345	160/33	2003	LTL
T/03/U01003271	100/33	2003	LTL
T/03/U01003116	100/33	2003	LTL
T/03/U04003039	400/33	2003	LTL
T/03/U01003020	100/33	2003	LTL
T/02/U01003653	100/33	2003	LTL
T/03/U01601191	160/11	2003	LTL
T/02/U01003667	100/33	2003	LTL
T/03/U01003160	100/33	2003	LTL
T/03/U01003033	100/33	2003	LTL
T/03/U01003314	100/33	2003	LTL
T/03/U01003085	100/33	2003	LTL
T/03/U01003253	100/33	2003	LTL
T/03/U01003102	100/33	2003	LTL
T/03/U01003262	100/33	2003	LTL
T/03/U01003306	100/33	2003	LTL
T/03/U01003326	100/33	2003	LTL
T/02/U01003276	100/33	2003	LTL
T/03/U01603232	160/33	2003	LTL
T/03/U04003044	400/33	2003	LTL
T/03/U01601039	160/11	2003	LTL
T/03/U01601186	160/11	2003	LTL
T/03/U01003360	100/33	2003	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/03/U01601194	160/11	2003	LTL
T/03/U01603222	160/33	2003	LTL
T/03/U01603281	160/33	2003	
T/03/U04003052	400/33	2003	LTL
T/03/U01603042	160/33	2003	LTL
T/03/U01003104	100/33	2003	LTL
T/03/U01003198	100/33	2003	LTL
T/03/U06303002	630/33	2003	LTL
T03/u02503078	250/33	2003	LTL
T03/u01603273	160/33	2003	LTL
T03/u06303028	630/33	2003	LTL
T03/u4003061	400/33	2003	LTL
T/03/U01603274	160/33	2003	LTL
T/08/U010030096	100/33	2003	LTL
T/03/U01003084	100/33	2003	LTL
T/03/U01603132	160/33	2003	LTL
T/04/U016030086	160/33	2004	LTL
T/04/U016030101	160/33	2004	LTL
T/04/U025030060	250/33	2004	LTL
T/04/U016030078	160/33	2004	LTL
T/04/U016030115	160/33	2004	LTL
T/04/U016030190	160/33	2004	LTL
T/04/U025030065	250/33	2004	LTL
T/04/U025030114	250/33	2004	LTL
T/04/U016030301	160/33	2004	LTL
T/04/U063030004	630/33	2004	LTL
T/04/U016030222	160/33	2004	LTL
T/04/U010030218	100/33	2004	LTL
T/04/U010030368	100/33	2004	LTL
T/04/U010030364	100/33	2004	LTL
T/04/U016030102	160/33	2004	LTL
T/04/U016030026	160/33	2004	LTL
T/04/U010030358	100/33	2004	LTL
T/04/U010030375	100/33	2004	LTL
T/04/U010030136	100/33	2004	LTL
T/04/U010030185	100/33	2004	LTL
T/04/U01003004	100/33	2004	LTL
T/04/U010030264	100/33	2004	LTL
T/04/U010030124	100/33	2004	LTL
T/04/U010030153	100/33	2004	LTL
T/04/U016030123	160/33	2004	LTL
T/04/U016030043	160/33	2004	LTL
T/04/U016030010	160/33	2004	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T04/U016030121	160/33	2004	LTL
T04/U025030080	250/33	2004	LTL
T/04/U025010007	250/11	2004	LTL
T/04/U025010042	250/11	2004	LTL
T/04/U010030329	100/33	2004	LTL
T/04/U010030426	100/33	2004	LTL
T/04/U0100361	100/33	2004	LTL
T/04/U010030401	100/33	2004	LTL
T/04/16030053	160/33	2004	LTL
T/04/U010010039	100/11	2004	LTL
T/04/U025030111	250/33	2004	LTL
T/04/U016030154	160/33	2004	LTL
T/04/U010030430	100/33	2004	LTL
T/04/U016030055	160/33	2004	LTL
T/04/U010030072	100/33	2004	LTL
T/04/U016030054	160/33	2004	LTL
T/03/U01603327	160/33	2004	LTL
T/03/U01603333	160/33	2004	LTL
T/04/U016010013	160/11	2004	LTL
T/03/U01003522	100/33	2004	LTL
T/04/U010030029	100/33	2004	LTL
T/04/U063030003	630/33	2004	LTL
T04/U010030438	100/34	2004	LTL
T04/U010030127	100/35	2004	LTL
T/03/U01003577	100/33	2004	LTL
T/04/U016030315	160/33	2004	LTL
T/04/U025010023	250/11	2004	LTL
T/04/U010030407	100/33	2004	LTL
T/04/U025030105	250/33	2004	LTL
T/04/U016030267	160/33	2004	LTL
T/04/U016030185	160/33	2004	LTL
T/04/U016030046	160/33	2004	LTL
T/04/U0100030023	1000/33	2004	LTL
T/04/U040030006	400/33	2004	LTL
T/04/U063030005	360/33	2004	LTL
T/04/U100010021	1000/11	2004	LTL
T/04/U016030173	160/33	2004	LTL
T/04/U100030034	1000/33	2004	LTL
T/04/U010030171	100/33	2004	LTL
T/04/U010030378	100/33	2004	LTL
T/04/U016030212	160/33	2004	LTL
T/04/U0100030029	1000/33	2004	LTL
T/04/U016030168	160/33	2004	LTL
T/04/U100030020	1000/33	2004	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/03/U010001014	1000/11	2004	LTL
T/04/U016030265	160/33	2004	LTL
T/04/U010030123	100/33	2004	LTL
T04/u016030200	160/33	2004	LTL
T04/u040030009	400/33	2004	LTL
T04/4025030089	250/33	2004	LTL
T/04/U010030282	100/33	2004	LTL
T/04/U02503092	250/33	2004	LTL
T/04/U016030237	160/33	2004	LTL
T/04/U016030238	160/33	2004	LTL
T/04/U01603022	160/33	2004	LTL
T/04/U016030233	160/33	2004	LTL
T/94/2503120	250/33	2005	LTL
T/05/U010030183	100/33	2005	LTL
T/05/U010030219	100/33	2005	LTL
T/05/U010030109	100/33	2005	LTL
T/05/U010030218	100/33	2005	LTL
T/05/U010030162	100/33	2005	LTL
T/05/U010030206	100/33	2005	LTL
T/05/U016030224	160/33	2005	LTL
T/05/U016030274	160/33	2005	LTL
T/05/U016030204	160/33	2005	LTL
T/05/U063030003	630/33	2005	LTL
T/05/U016030304	160/33	2005	LTL
T/05/U010030427	100/33	2005	LTL
T/05/U025030119	250/33	2005	LTL
T/05/U010030216	100/33	2005	LTL
T/05/U016030209	160/33	2005	LTL
T/05/U016030278	160/33	2005	LTL
T/05/U025030019	250/33	2005	LTL
T/05/U025030083	250/33	2005	LTL
T/05/U016030327	160/33	2005	LTL
T/05/U010030295	100/33	2005	LTL
T/05/U040030065	400/33	2005	LTL
T05/U010030215	100/33	2005	LTL
T05/U010030143	100/33	2005	LTL
T/05/U010010048	100/11	2005	LTL
T/05/U016030113	160/33	2005	LTL
T/05/U025030136	250/33	2005	LTL
T/05/U016030169	160/33	2005	LTL
T/05/U010030120	100/33	2005	LTL
T/05/U016030164	160/33	2005	LTL
T/05/U025030095	250/33	2005	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/05/U010030130	100/33	2005	LTL
T/05/10030101	100/33	2005	LTL
T/05/U010030292	100/33	2005	LTL
T/05/U016030257	160/33	2005	LTL
T/05/U010030198	100/33	2005	LTL
T/05/U010030161	100/33	2005	LTL
T/05/U016030258	160/33	2005	LTL
T/05/U016030223	160/33	2005	LTL
T/05/U010030298	100/33	2005	LTL
T/05/U01601040	160/11	2005	LTL
T/05/U0/16030341	160/33	2005	LTL
T/05/U016030054	160/33	2005	LTL
T/05/U016030314	160/33	2005	LTL
T/05/U01603030047	160/33	2005	LTL
T/05/U040030006	400/33	2005	LTL
T/05/U010030355	100/33	2005	LTL
T/05/U010030386	100/33	2005	LTL
T/05/U010030195	100/33	2005	LTL
T/05/U063030035	630/33	2005	LTL
T/05/U010030173	100/33	2005	LTL
T/05/U010030179	100/33	2005	LTL
T/05/10030227	100/33	2005	LTL
T/05/U010030252	100/33	2005	LTL
T/05/U016030115	160/33	2005	LTL
T/05/U010030406	100/33	2005	LTL
T/05/U010030376	100/33	2005	LTL
T/05/U010030168	100/33	2005	LTL
T/05/U040030005	400/33	2005	LTL
T/05/UO40030008	400/33	2005	LTL
T/05/U63010006	630/11	2005	LTL
T/05/U063030009	630/33	2005	LTL
T/05/U016030027	160/33	2005	LTL
T/05/U016030068	160/33	2005	LTL
T/05/U016030364	160/33	2005	LTL
T05/u025030087	250/33	2005	LTL
T05/u0100010002	1000/11	2005	LTL
T/05/U010030413	100/33	2005	LTL
T/05/U025010050	250/11	2005	LTL
T/05/U100030001	1000/33	2005	LTL
T/05/U02503077	250/33	2005	LTL
T/05/U0100030029	1000/33	2005	LTL
T/04/32TU02530001	25/33	2005	LTL
T/05/U025030203	250/33	2005	LTL
T/05/U0100030004	1000/33	2005	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/06/U025030047	250/33	2006	LTL
74620	100/33	2006	Other
T/06/U010030119	100/33	2006	LTL
74315	100/33	2006	Other
T/06/U016030018	160/33	2006	LTL
T/06/10030256	100/33	2006	LTL
74198	100/33	2006	Other
NRP	100/33	2006	Other
74196	100/33	2006	Other
77163	100/33	2006	Other
T/06/U010030348	100/33	2006	LTL
T/06/U016030029	160/33	2006	LTL
74212	100/33	2006	Other
74238	100/33	2006	Other
74259	100/33	2006	Other
74195	100/33	2006	Other
T/06/U016030110	160/33	2006	LTL
74159	100/33	2006	Other
T/06/U010030355	100/33	2006	LTL
T/06/U010030338	100/33	2006	LTL
T/97/1603130	160/33	2006	LTL
14199	100/33	2006	Other
T/06/U010030338	100/33	2006	LTL
T/06/U010030100	100/33	2006	LTL
74688	160/33	2006	Other
74596	100/33	2006	Other
74145	100/11	2006	Other
T/87/7207	100/33	2006	Other
74244	100/33	2006	Other
74647	100/33	2006	Other
T/06/U010030058	100/33	2006	LTL
11156	100/33	2006	Other
74646	100/33	2006	Other
77198	160/33	2006	Other
77149	100/33	2006	Other
T/06/U016030086	160/33	2006	LTL
T/06/U016030349	160/33	2006	LTL
T/06/U016030051	160/33	2006	LTL
74694	160/33	2006	Other
T/06/U016030307	160/33	2006	LTL
74150	100/11	2006	Other
(N,N,P)	100/33	2006	Other
74217	100/33	2006	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
74654	160/33	2006	Other
74143	100/11	2006	Other
T/05/U010030130	100/33	2006	LTL
74441	100/33	2006	Other
T/05/U016030369	160/33	2006	LTL
74658	160/33	2006	Other
T/06/U016030092	160/33	2006	LTL
74395	100/33	2006	Other
T/06/U010030278	100/33	2006	LTL
74160	100/33	2006	Other
74394	100/33	2006	Other
74144	100/11	2006	Other
74132	100/11	2006	Other
T/06/U010030340	100/33	2006	LTL
74450	100/33	2006	Other
74188	100/33	2006	Other
T/06/U010030234	100/33	2006	LTL
T/06/U010030114	100/33	2006	LTL
T/06/U10030299	100/33	2006	LTL
T/06/U010030299	100/33	2006	LTL
74375	100/33	2006	Other
74673	160/33	2006	LTL
T/06/U010030364	100/33	2006	LTL
74684	160/33	2006	LTL
T/06/U010030068	100/33	2006	LTL
T/06/U0100030003	1000/33	2006	LTL
T/06/U010030167	100/33	2006	LTL
74324	100/33	2006	Other
T/06/U010030236	100/33	2006	LTL
T/06/U010030037	100/33	2006	LTL
T/06/16030212	160/33	2006	LTL
T/06/UO63030014	630/33	2006	LTL
T/06/U025010023	250/11	2006	LTL
T/06/U025010039	250/11	2006	LTL
14914	100/33	2006	Other
T/06/U016030274	160/33	2006	LTL
T/06/U063030004	630/33	2006	LTL
T/06/U016030122	160/33	2006	LTL
T/06/U0100294	100/33	2006	LTL
T/06/U100010025	1000/11	2006	LTL
74176	100/33	2006	Other
T/06/U063010038	630/11	2006	LTL
T06/u016030395	160/33	2006	LTL
T06/u063030007	630/33	2006	LTL

Serial No	**kVA/kV**	**Manufactured year**	**Manufacturer**
T06/u063030019	630/33	2006	LTL
T06/u016030021	160/33	2006	LTL
T06/u063030031	630/33	2006	LTL
T/06/U016030130	160/33	2006	LTL
T/06/U025030090	250/33	2006	LTL
74158	100/33	2006	Other
74434	100/33	2006	Other
74471	100/33	2006	Other
T/06/U016030246	160/33	2006	LTL
T/06/U063030013	630/33	2006	LTL
74685	160/33	2006	Other
74525	100/33	2006	Other
74225	100/33	2006	Other
T/07/U010030030	100/33	2007	LTL
T/07/U016030035	160/33	2007	LTL
T/07/U010030130	100/33	2007	LTL
T/07/U040030016	400/33	2007	LTL
T/07/U010030168	100/33	2007	LTL
T/07/U010030122	100/33	2007	LTL
T/07/U016030188	160/33	2007	LTL
T/07/U010030109	100/33	2007	LTL
T/07/U016030060	160/33	2007	LTL
T/07/U010030218	100/33	2007	LTL
T/07/U010030174	100/33	2007	LTL
T/07/U010030162	100/33	2007	LTL
T/07/U040030044	400/33	2007	LTL
T07/U01603022	160/33	2007	LTL
T/07/U010030242	100/33	2007	LTL
T/07/U0/25030093	250/33	2007	LTL
T/07/U063030008	630/33	2007	LTL
T/07/U010010013	100/11	2007	LTL
T/07/U025030054	250/33	2007	LTL
T/07/U063030018	630/33	2007	LTL
T/07/U016030330	160/33	2007	LTL
T07/u100030024	1000/33	2007	LTL
T/07/U016030088	160/33	2007	LTL
T/07/U040030011	400/33	2007	LTL
T/08/U010030105	100/33	2008	LTL
T/08/U010030607	100/33	2008	LTL
T/08/U016030216	160/33	2008	LTL
T/08/U025030159	250/33	2008	LTL
T/08/U04003007	400/33	2008	LTL
T/08/U016030024	160/33	2008	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/08/U010030324	100/33	2008	LTL
T/08/U010030071	100/33	2008	LTL
T/08/U010030277	100/33	2008	LTL
T/00/51R136	100/33	2008	LTL
T/08/U010030578	100/33	2008	LTL
T08/U010030429	100/33	2008	LTL
T/02/U010030267	100/33	2008	LTL
T/08/U016030325	160/33	2008	LTL
T/08/U0100010003	1000/11	2008	LTL
T08/u025030070	250/33	2008	LTL
T08/u016030407	160/33	2008	LTL
T/08/U010030475	100/33	2008	LTL
T/07/10030677	100/33	2008	LTL
T/08/U010030678	100/33	2008	LTL
T/09/U010030382	100/33	2009	LTL
T/09/U0100364	100/33	2009	LTL
T/09/U010030577	100/33	2009	LTL
T/09/U010030795	100/33	2009	LTL
T/09/U016030006	160/33	2009	LTL
T/09/UO10030312	100/33	2009	LTL
T/09/U010030790	100/33	2009	LTL
T/06/U0/16010079	160/11	20006	LTL
T/02/U01003635	100/33	NA	LTL
NRP	160/11	NA	LTL
NRP	250/33	NA	MINEL
T/98/01003113	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	250/33	NA	APEX
T/02/U01003430	100/33	NA	LTL
NRP	100/33	NA	APEX
T/02/U01603193	160/33	NA	LTL
METERING UNIT	50/33	NA	
METERING UNIT	50/33	NA	
NRP	100/33	NA	LTL
NRP	100/33	NA	RUMANIA
T/93/4003050	400/33	NA	LTL
NRP	250/11	NA	PAWELL
NRP	160/11	NA	ECE
NRP	50/11	NA	LTL
NRP	100/11	NA	LTL
T/98/06303013	630/33	NA	LTL
NRP	160/11	NA	LTL
NRP	50/11	NA	LTL
NRP	160/33	NA	APEX

Serial No	kVA/kV	Manufactured year	Manufacturer
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
T/00/U02501022	250/11	NA	LTL
NRP	250/33	NA	NEW KOREA
NRP	160/33	NA	LTL
T/02/U01003161	100/33	NA	LTL
NRP	630/11	NA	NEW KOREA
T/96/1003050	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	160/33	NA	LTL
NRP	630/33	NA	LTL
NRP	250/11	NA	UNELEC
NRP	100/33	NA	LTL
NRP	63/11	NA	LTL
T/90/8101	100/33	NA	LTL
NRP	100/11	NA	LTL
T/91/8319	100/33	NA	LTL
NRP	160/33	NA	UNELEC
NRP	100/33	NA	LTL
NRP	630/11	NA	LTL
T/94/1603028	160/33	NA	LTL
NRP	100/33	NA	APEX
NRP	250/11	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	400/11	NA	LTL
NRP	250/33	NA	LTL
NRP	100/33	NA	LTL
NRP	160/33	NA	LTL
NRP	100/33	NA	APEX
27431 V	40/33	NA	crompton
NRP	250/33	NA	LTL
NRP	100/33	NA	LTL
T/96/1003067	100/33	NA	LTL
NRP	160/11	NA	NEW KOREA
NRP	100/33	NA	APEX
T/01/U01603102	160/33	NA	LTL
NRP	100/11	NA	LTL
T/92/1003135	100/33	NA	LTL
NRP	160/33	NA	
T/03/U01603095	160/33	NA	LTL
NRP	250/11	NA	UNELEC
NRP	160/33	NA	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
NRP	400/11	NA	LTL
NRP	160/33	NA	LTL
T/94/1003090	100/33	NA	LTL
NRP	1000/11	NA	LTL
T/92/1438	250/11	NA	LTL
NRP	100/33	NA	LTL
T/97/01601070	160/11	NA	LTL
NRP	250/11	NA	LTL
NRP	800/11	NA	LTL
NRP	1000/33	NA	LTL
NRP	800/11	NA	LTL
T/91/13529	160/33	NA	LTL
NRP	2000/11	NA	SIEMENS
T/99/U050031001	33/11	NA	LTL
NRP	2000/11	NA	SIEMENS
T/92/8632	100/33	NA	LTL
NRP	2000/11	NA	
T/95/1603051	160/33	NA	LTL
337795	300/33	NA	
T/92/8755	100/33	NA	LTL
323129	200/33	NA	
T/98/01003015	100/33	NA	LTL
T/89/631110	630/33	NA	
T/98/2501109	250/11	NA	LTL
WBB26170	500/11	NA	
T/94/1003073	100/33	NA	LTL
340530	500/11	NA	
T/96367	500/11	NA	
RY/248832	150/33	NA	
T/99/1003548	100/33	NA	LTL
T/89/631106	630/11	NA	
27694V	500/11	NA	
NRP	50/33	NA	
379297	1000/11	NA	
T/96/1003072	100/33	NA	LTL
T/88/2448	100/33	NA	LTL B/L
27696 V		NA	crompton
T/94/2503099	250/33	NA	LTL
T/92/8533	100/33	NA	LTL
T/98/U01603231	100/33	NA	LTL
T/93/1638	400/11	NA	LTL
T/88/7977	100/33	NA	LTL B/L
T/02/I 010001002	1000/11	NA	LTL
T/88/DP 6006	630/11	NA	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/97/100030005	1000/33	NA	LTL
T/88/13242	160/33	NA	LTL B/L
T/96/2503005	250/33	NA	LTL
T/92/1445	250/11	NA	LTL
T/96/2501134	250/11	NA	LTL
T 570 B 34723	100/33	NA	APEX
391217	160/33	NA	Unelec
T/85/1626	400/11	NA	LTL B/L
110053 B	150/33	NA	
T/85/765	160/11	NA	B/L
63852		NA	Minel
T/93/10033572	100/33	NA	LTL
T/98/01001050	100/11	NA	LTL
T/86/5504	800/11	NA	LTL
T/92/3702		NA	LTL
T/03/U01601144	160/11	NA	LTL
25953	250/11	NA	J,E,C
T.570B 34339	100/33	NA	APEX
25558	50/11	NA	J.E.C
T/99/U01003335	100/33	NA	LTL
T/96/2501074	250/11	NA	LTL
391238	100/33	NA	unelec
T/96/2501092 -LECO	250/11	NA	LTL
T/84/322	100/11	NA	LTL B/L
337664	200/33	NA	unelec
T/91/1611423	160/11	NA	LTL
T/88/13171	160/33	NA	LTL
117801	100/33	NA	Rumania
T/95/1603073	160/33	NA	LTL
337830	300/33	NA	unelec
T/98/01601049	160/11	NA	LTL
T/95/1601100	160/11	NA	LTL
T/91/1611370	160/11	NA	LTL
T/84/1070	250/11	NA	LTL B/L
T/95/01603044	160/33	NA	LTL
T. 435. 27003	50/33	NA	APEX
T/92/1611433	160/11	NA	LTL
T/02/U01003451	100/33	NA	LTL
T/95/4003016	400/33	NA	LTL
T/92/1437	250/11	NA	LTL
T/02/U01603265	160/33	NA	LTL
T/99/U01003342	100/33	NA	LTL
T/93/1003213	100/33	NA	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/95/1003222	100/33	NA	LTL
T/98/1003346	100/33	NA	LTL
T/93/1003529	100/33	NA	LTL
T/99/U01001005	100/33	NA	LTL
T/96/1603036	160/33	NA	LTL
T/90/8027	100/33	NA	LTL
T/94/4003055	400/33	NA	LTL
T/96/1003232	100/33	NA	LTL
T/98/U01003325	100/33	NA	LTL
T/98/U01003322	100/33	NA	LTL
T/94/6303024	630/33	NA	LTL
T/92/1003182	100/33	NA	LTL
T/88/7272	100/33	NA	LTL B/L
T/86/2517	100/33	NA	LTL B/L
T/88/7638	100/33	NA	LTL B/L
T/99/U01003336	100/33	NA	LTL
T/94/2503095	250/33	NA	LTL
T/92/3651	400/33	NA	LTL
T/98/02503081	250/33	NA	LTL
T/93/1003444	100/33	NA	LTL
T/90/8163	100/33	NA	LTL
T/97/01603226	160/33	NA	LTL
T/94/1003081	100/33	NA	LTL
T/92/1003169	100/33	NA	LTL
T/97/1003205	100/33	NA	LTL
T/95/1603149	160/33	NA	LTL
T/93/1003201	100/33	NA	LTL
T/99/U01003280	100/33	NA	LTL
NO RA. PLATE.	100/33	NA	LTL B/L
T/92/1003129	100/33	NA	LTL
T/91/13416	160/33	NA	LTL
T/88/7303	100/33	NA	LTL B/L
T/88/7564	100/33	NA	LTL B/L
T/93/1003377	100/33	NA	LTL
T/94/1003264	100/33	NA	LTL
T/87/7382	100/33	NA	LTL B/L
T/88/13207	160/33	NA	LTL B/L
T/86/7068	100/33	NA	LTL B/L
T/88/DP 6004	100/33	NA	LTL B/L
Not Clear		NA	
T/88/7692	100/33	NA	LTL B/L
T/91/01003320	100/33	NA	LTL
T/94/1603220	160/33	NA	LTL
NO RA. PLATE.	630/33	NA	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/91/1325	250/11	NA	LTL
T/92/1431	250/11	NA	LTL
T/93/1003131	100/33	NA	LTL
T/92/2503167	250/33	NA	LTL
T/84/2677	160/33	NA	LTL B/L
T/87/2872	160/33	NA	LTL B/L
NO RA. PLATE.	250/11	NA	LTL
T/84/2670	160/33	NA	LTL B/L
T/94/2503129	250/33	NA	LTL
T/95/1601001	160/11	NA	LTL
T/99/2503049	250/33	NA	LTL
T/97/1001058	100/11	NA	LTL
T.570C.34778	250/33	NA	APEX
T/87/1445		NA	LTL
T/87/2892	160/33	NA	LTL B/L
117846	100/33	NA	Rumania
S 18015/76	160/33	NA	ECE
T/85/41	63/11	NA	LTL B/L
T.570B 34397	100/33	NA	APEX
T/84/3080	250/33	NA	LTL B/L
32224	250/33	NA	New Koria
T/90/5037	630/11	NA	LTL
B3/2/19/1601099	160/11	NA	LTL
83910	1000/11	NA	ELCO
T/02/U01603131	160/33	NA	LTL
T/90/3312	250/33	NA	LTL
T/91/3401	250/33	NA	LTL
T/92/3331	250/33	NA	LTL
NO RA.PL.	630/11	NA	LTL
120272	800/11	NA	New Koria
117809	100/33	NA	Rumania
T/95/ I 8001008	800/11	NA	LTL
T/00/U01603464	160/33	NA	LTL
T/98/4003024	400/33	NA	LTL
T/95/ I 6301002	630/11	NA	LTL
337615	200/33	NA	unelec
092-82-5244	400/11	NA	B/L
T 380J 20818	100/11	NA	APEX
T/87/2936	160/33	NA	LTL B/L
T/90/1348	250/11	NA	LTL
NO RA.PL.	250/11	NA	LTL B/L
T/92/1405	250/11	NA	LTL
840143	630/11	NA	New Koria

Serial No	kVA/kV	Manufactured year	Manufacturer
120273	800/11	NA	New Koria
T/04/U010030011	100/33	NA	LTL
T/95/ I 4001017	400/11	NA	LTL
32264	400/11	NA	New Koria
840139	630/11	NA	New Koria
T/92/1611458	160/11	NA	LTL
T/88/4050	400/11	NA	LTL
T/93/1003176	100/33	NA	LTL
T/95/1601033	160/11	NA	LTL
T/02/70 2258	160/33	NA	B/L
T/97/1601030	160/11	NA	LTL
63408	400/11	NA	Minel
63842	160/33	NA	Minel
NO RA.PL.	100/33	NA	APEX
T 570B 34753	100/33	NA	APEX
T/98/01001060	100/11	NA	LTL
T/91/13234	160/33	NA	LTL
T/96/1003124	100/33	NA	LTL
T/01/U01003159	100/33	NA	LTL
996551	200/11	NA	G.E.C
T/97/2501011	250/11	NA	LTL
T/92/1611449	160/11	NA	LTL
340543	500/11	NA	unelec
820331	150/33	NA	New Koria
T/94/2501033	250/11	NA	LTL
T/91/8332	100/33	NA	LTL
T/96/4001050	400/11	NA	LTL
T/92/4164	630/33	NA	LTL
T/99/U04001012	400/11	NA	LTL
T/87/7292	100/33	NA	LTL
T/88/7544	100/33	NA	LTL
T/86/2467	160/33	NA	LTL B/L
T/88/7675	100/33	NA	LTL B/L
T/95/1603075	160/33	NA	LTL
T/85/2368	100/33	NA	LTL B/L
T/90/13339	160/33	NA	LTL
T/91/3843	400/33	NA	LTL
T/86/2790	160/33	NA	LTL B/L
T/94/1001029	100/11	NA	LTL
T/95/1001053	100/11	NA	LTL
T/85/2830	160/33	NA	LTL B/L
T/88/7456	100/33	NA	LTL B/L
120238	630/33	NA	New Koria
T/93/1603127	160/33	NA	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/97/2503117	250/33	NA	LTL
T/97/01603245	160/33	NA	LTL
T/01/U01003336	100/33	NA	LTL
T/96/4003031	400/33	NA	LTL
T/91/3649	250/33	NA	LTL
T/92/13746	160/33	NA	LTL
T/99/U04003056	400/33	NA	LTL
T/93/1003370	100/33	NA	LTL
117775	160/33	NA	Rumania
NO RA.PL.	160/11	NA	Scroch
T/88/DP 2021	250/11	NA	LTL
T/97/4520	400/11	NA	LTL
T/91/8352	100/33	NA	LTL
T/93/1001145	100/11	NA	LTL
A 08146110	100/11	NA	Mitsubishi
T/94/1001011	100/11	NA	LTL
T/96/1003002	100/33	NA	LTL
T/00/U01603116	160/33	NA	LTL
T/98/01603165	160/33	NA	LTL
T/91/13555	160/33	NA	LTL
T/82/8546	100/33	NA	LTL B/L
T/95/1003323	100/33	NA	LTL
T/82/7000	100/33	NA	LTL B/L
T/84/2704	160/33	NA	LTL B/L
NO RA.PL.	500/33	NA	unelec
NRP	250/11	NA	Crompton
T/00/ I 100010006	1000/11	NA	LTL
996548	200/11	NA	GEC
T/92/100317	1000/33	NA	New Koria
140A/03	250/11	NA	Brox Burn
RY- 2483/32	150/33	NA	NEI
T/87/13072	160/33	NA	LTL
T.570B 34561	100/33	NA	APEX
T/91/8319	100/33	NA	LTL
T/04/U010030389	100/33	NA	LTL
T/99/U01003534	100/33	NA	LTL
T/92/8810	100/33	NA	LTL
T/93/1003082	100/33	NA	LTL
T/96/1003045	100/33	NA	LTL
T/01/U01003080	100/33	NA	LTL
T/85/1179	250/11	NA	LTL B/L
32267	630/11	NA	New Koria
T/87/2909	160/33	NA	LTL B/L

Serial No	kVA/kV	Manufactured year	Manufacturer
T/93/1001011	100/11	NA	LTL
NO RA.PL.	160/11	NA	LTL
T/91/8282	100/33	NA	LTL
NRP	100/11	NA	Mitsubishi
T/02/U01003101	100/33	NA	LTL
T/97/1003306	100/33	NA	LTL
T/85/806	160/11	NA	LTL B/L
T/98/01003062	100/33	NA	LTL
920034	500/11	NA	New Koria
T/93/1603093	160/33	NA	LTL
25891	50/11	NA	Jonson ele.
T/86/2592	100/33	NA	LTL B/L
T.570B 34719	100/33	NA	APEX
T/96/381	100/11	NA	Siemens
27696 V	500/11	NA	Crompton
63883	160/33	NA	Minel
Tt/93/2501093	250/11	NA	LTL
T/90/1668	400/11	NA	LTL
T/94/4001010	400/11	NA	LTL
T/92/1453	250/11	NA	LTL
T/90/1947	630/11	NA	LTL
T/92/053009	50/33	NA	LTL
T/90/8040	100/33	NA	LTL
NO RA.PL.	250/33	NA	Minel
T/88/3278	250/33	NA	LTL B/L
T/91/13525	160/33	NA	LTL
T/85/1195	250/11	NA	LTL B/L
T/98/01601038	160/11	NA	LTL
T/86/2504	100/33	NA	LTL B/L
NRP	100/33	NA	LTL
T.380E 20683	50/33	NA	APEX
T/95/1603114	160/33	NA	LTL
9670316	100/33	NA	Ferranti
T/95/2501102	250/11	NA	LTL
920119	100/33	NA	New Koria
52354	50/33	NA	Minel
T/98/01001037	100/33	NA	LTL
T/90/13327	160/33	NA	LTL
T/96/1603132	160/33	NA	LTL
T/93/1603170	160/33	NA	LTL
T/93/1603289	160/33	NA	LTL
NRP	250/33	NA	New Korea
T/85/3204	250/33	NA	LTL B/L
T/95/1003154	100/33	NA	LTL

Serial No	kVA/kV	Manufactured year	Manufacturer
T/94/1003271	100/33	NA	LTL
T/88/13090	160/33	NA	LTL B/L
T/94/1601028	160/11	NA	LTL
T/01/U01003310	100/33	NA	LTL
T/96/01003035	100/33	NA	LTL
T/96/1603148	160/33	NA	LTL
T/02/U01003337	100/33	NA	LTL
T/93/1003322	100/33	NA	LTL
T/92/8489	100/33	NA	LTL
T/93/1003113	100/33	NA	LTL
T/95/1003280	100/33	NA	LTL
52285	50/33	NA	Minel
337770	300/33	NA	unelec
T/88/7536	100/33	NA	LTL B/L
T/88/7693	100/33	NA	LTL B/L
T/94/1003230	100/33	NA	LTL
T/91/8390	100/33	NA	LTL
T/89/7763	100/33	NA	LTL
T/86/7164	100/33	NA	LTL
T/570B/34539	100/33	NA	APEX
N 3149 B	500/11	NA	Ferranti
T/03/U010003016	1000/33	NA	LTL
T/00/U01603202	160/33	NA	LTL
T/96/1603135	160/33	NA	LTL
T/92/8688	100/33	NA	LTL
T/83/4091	630/33	NA	LTL
NRP	160/33	NA	LTL
NRP	160/33	NA	LTL
NRP 09	100/33	NA	LTL
2267	100/33	NA	LTL
986904033	75/11	NA	LTL
NRP-5		NA	LTL
NRP-12	100/33000	NA	LTL
NRP-1	100/33000	NA	LTL
SR-2112003 Potential transformer		NA	
SR-211200 Potential transformer		NA	
NRP-P Potential transformer		NA	
NRP-13		NA	
201010254	75/33	NA	Other
104286/2	100/33	NA	Other
83907	500/11	NA	Other
75818C	100/33	NA	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
NRP	630/33	NA	LTL
NRP	160/33	NA	LTL
NRP	400/33	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	160/33	NA	LTL
21781	50/33	NA	Other
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	LTL
NRP	50/11	NA	Other
NRP	50/11	NA	Other
NRP	150/11	NA	Other
NRP	160/33	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	Other
NRP	160/33	NA	LTL
NRP	100/33	NA	LTL
NRP	100/33	NA	Other
NRP	100/33	NA	LTL
NRP	30/33	NA	Other
NRP (4)	100/33	NA	LTL
21774	75/33	NA	Other
75817C	100/33	NA	Other
NRP	50/33	NA	Other
NRP	50/33	NA	Other
NRP	250/11	NA	Other
NRP	100/33	NA	
NRP	500/11	NA	Other
EBH/10411/1	200/11	NA	Other
3320	250/33	NA	LTL
NRP	100/33	NA	Other
NRP	100/33	NA	Other
75253/C	75/11	NA	Other
NRP	400/33	NA	Other
NRP	200/11	NA	Other
NRP	50/33	NA	LTL
NRP	200/33	NA	Other
NRP (12)	100/33	NA	LTL
NRP (2)	160/33	NA	LTL
NRP (10)	100/33	NA	LTL
21410308	150/33	NA	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
NRP (15)	500/11	NA	Other
1583		NA	Other
T/570B/34547	100/33	NA	Other
T/430353	500/11	NA	Other
T/430352	500/11	NA	Other
T/95591	500/11	NA	Other
T/430753	500/11	NA	Other
920089	400/11	NA	Other
T/95588	500/11	NA	Other
T/95403	500/11	NA	Other
T/98758	500/11	NA	Other
T/90809	500/11	NA	Other
T/96368	500/11	NA	Other
90804	500/11	NA	Other
25731	250/11	NA	Other
NRP (25)	400/11	NA	Other
WBB 26173	500/11	NA	Other
124766 96/70241	15/11	NA	Other
NRP	160/33	NA	
NRP	100/33	NA	LTL
NRP	100/11	NA	Other
NRP	50/11	NA	Other
NRP		NA	Other
NRP		NA	Other
T/97/01003330		NA	LTL
43734	150/11	NA	Other
7696	100/33	NA	LTL
516423	500/33	NA	Other
NRP ES-1	160/33	NA	LTL
NRP ES-2	250/33	NA	LTL
NRP ES-3	250/33	NA	LTL
NRP	250/33	NA	LTL
124769	15/11	NA	Other
NRP	150/33	NA	Other
NRP	250/11	NA	LTL
NRP	250/11	NA	LTL
NRP	50/33	NA	Other
NRP	160/11	NA	
NRP	100/33	NA	LTL
NRP	100/33	NA	
NRP	100/11	NA	LTL
T/87/3300	250/33	NA	LTL
NRP	250/33	NA	

Serial No	kVA/kV	Manufactured year	Manufacturer
NRP	100/11	NA	LTL
NRP	100/33	NA	LTL
NRP		NA	
NRP		NA	
NRP	50/33	NA	Other
NRP	50/33	NA	Other
NRP	50/33	NA	Other
NRP	50/33	NA	Other
NRP	100/33	NA	LTL
NRP	100/11	NA	LTL
NRP	50/11	NA	Other
NRP	100/33	NA	Other
NRP	100/33	NA	LTL
T/592 (NRP)	400/33	NA	Other
No Number Plate	200/11	NA	Other
(N,N,P) C50632	200/11	NA	Other
N,N,P	250/33	NA	Other
N,N,P SmallTIE	10	NA	LTL
N,N,P	100/33	NA	LTL
N,N,P	100/33	NA	Other
516472	100/11	NA	Other
NRP	100/11	NA	LTL
NRP	100/11	NA	LTL
NRP	100/33	NA	LTL
NRP	100/11	NA	Other
NRP	100/33	NA	LTL
NRP	100/33	NA	Other
NRP	100/33	NA	LTL
NRP	500/33	NA	Other
T/570B/34397	100/33	NA	Other
T/86/2504	100/33	NA	LTL
337795	300/33	NA	Other
NRP	100/33	NA	LTL
NRP	75/33	NA	Other
NRP	160/33	NA	LTL
337419	75/33	NA	Other
3534	250/33	NA	LTL
NRP	100/33	NA	LTL
NRP	400/33	NA	LTL
NRP	11	NA	LTL
74475	100/33	NA	Other
516401	300/33	NA	Other
6271512	150/33	NA	Other
6073418	200/33	NA	Other

Serial No	kVA/kV	Manufactured year	Manufacturer
7582	100/33	NA	LTL
6073516	150/33	NA	Other
NRP		NA	Other
NRP		NA	Other
NRP		NA	Other
NRP	50/33	NA	Other
516291	30/33	NA	Other
516302	50/33	NA	Other
522796	500/33	NA	Other
NRP	100/33	NA	Other
87107		NA	Other
6073319	300/33	NA	Other
NRP	160/33	NA	Other
NRP	100/11	NA	Other
4192	100/33	NA	Other
T82/1756	630/11	NA	LTL
N,R.P(T97/1603092)	160/33	NA	LTL
NRP	160/11	NA	LTL
NRP (3014)	250/11	NA	Other
NRP	250/11	NA	Other
NRP	500/11	NA	Other
NRP (5)		NA	Other
NRP	160/11	NA	LTL
NRP	160/33	NA	LTL
NRP	50/33	NA	Other
NRP	160/33	NA	LTL
NRP	160/33	NA	LTL
NRP	250/33	NA	LTL
NRP	160/33	NA	LTL
NRP	400/33	NA	LTL
NRP	160/33	NA	LTL
138845	10//33	NA	Other

Annexure 2 : Summary of PCB suspected transformers at Wasgamuwa Yard (further verification required)

x no :	Serial no.	Manufacture's name	Country	Year of manufacturing	Capacity (kVA)	Oil weight (kg)	Remarks
1	21787	Ansaldo	NA	NA	75	126	
2	590141	Denis Ferrnety	England	NA	150	-	
3	71365	The Electric Construction	England	1953	500	692	
4	71373	The Electric Construction	England	1953	300	429	
5	71401	The Electric Construction	England	1950	75	211	
6	122649	Ferrant	England	1951	100	221	
7	122654	Ferrant	England	1951	100	221	estimated
8	71395	The Electric Construction	England	1953	75	211	
9	28.00012409	NGGEF	India	1959	200	280	
10	421687	Ferranti	England	1965	200	551	
11	421688	Ferranti	England	1965	200	551	
12	337842	Unelec	England	1966	75	114	
13	57088	Electro Putera	Russia	1968	300	500	
14	27673V	Cromption Greaves	England	1970	63	120	estimated
15	20142V	Cromption Greaves	England	1970	150	240	
16	25889	Jhonson	India	1970	50	100	estimated
17	920042	New Korea	Korea	1970	500	387	
18	920041	New Korea	Korea	1970	500	387	
19	920080	New Korea	Korea	1970	400	297	
20	391227	Unelec	France	1970	250	230	estimated
21	301107	Unelec	France	1973	100	160	estimated
22	391132	Unelec	France	1973	400	330	
23	T.3801/20776	Apex	India	1978	150	239	
24	T.3805/20799	Apex	India	1978	100	158	
25	T.3801/20775	Apex	India	1978	150	239	
26	820397	New Korea	Korea	1978	150	171	
27	820413	New Korea	Korea	1978	250	225	
28	103064	Elproh euerco	N/A	1979	50	139	
29	Not available	Misubishi	Japan	1979	160	200	estimated
30	920046	New Korea	Korea	1979	400	297	
31	920069	New Korea	Korea	1979	400	297	
32	10135	Aros	German	1980	300	250	estimated
33	102762	Fabricator	N/A	1981	160	200	
34	63369	Minel-Trafo	Yugoslovia	1981	250	181	

x no :	Serial no.	Manufacture' s name	Country	Year of manufacturing	Capacity (kVA)	Oil weight (kg)	Remarks
35	22266	New Korea	Korea	1982	630	486	estimated
36	32251	New Korea	Korea	1983	160	145	estimated
37	32236	New Korea	Korea	1983	630	486	
38	80742	Fabrica	Rumania	1990	250	248	
39	62731/3	Leper	N/A	N/A	150	157	
40	522809	Schorch	N/A	N/A	500	454	
41	71394	Electric Construction	England	1953	75	211	
42	N/A	N/A	N/A	N/A	500	700	Estimated
43	872133	N/A	N/A	N/A	300	450	Estimated
44	8837445	N/A	N/A	1967	500	390	
45	31450	Ansldoson	N/A	1965	300	361	
46	516488	Scorch	N/A	N/A	200	240	
47	820405	New Korea	Korea	1978	N/A	113	
48	31451	Ansldoson	N/A	1965	300	361	
49	63405	Minel-Trafo	Yugoslavia	1981	250	181	
50	32252	New Korea	Korea	1983	160	245	
51	SR/590141	Ferranti	England	N/A	150	368	
52	SR/108793G.9	TSA	N/A	1977	100	130	
53	337584	Unelec	France	1966	75	114	
54	25889	Jonson Electric	N/A	N/A	50	81	
55	N/A	ELCO	Israel	N/A	300	500	
56	280012409	NGF	India	1970	200	280	
57	N/A	Electric Construction	England	1953	500	805	
58	85N6461	Pauwels	Belgium	N/A	160	145	
59	Not available	Osaka	N/A	N/A	25	75	Estimated
60	Not available	Unelec	N/A		100	150	Estimated
61	Not available	Minel-Trafo	Yugoslavia	1981	250	181	
62	391066	Unelec	France	1972	50	95	
63	Not available	Unelec	France	1972	50	95	
64	Not available	N/A	England	N/A	500	800	Estimated
65	T380F/20741	Apex	India	N/A	500	177	
66	2800012417	NGF	India	1970	300	325	
67	2800012378	NGF	India	1970	150	220	
68	2800012414	NGF	India	1970	300	293	
69	108793F7	TSA	France	1977	250	210	
70	T380F/20745	Apex	India	1978	500	351	
71	A08146075	Mitsubishi	Japan	1979	100	167	

x no :	Serial no.	Manufacture's name	Country	Year of manufacturing	Capacity (kVA)	Oil weight (kg)	Remarks
72	63374	Minel-Trafo	Yugoslovia	1981	250	181	
73	20144V	Crompton	England	1970	150	240	
74	63420	Minel-Trafo	Yugoslovia	1981	250	181	
75	391119	Unelec	France	1973	250	230	
76	6273215	Leper	Germen	N/A	200	232	
77	516473	Schorch	Germen	1932	100	160	
78	391075	Unelec	France	1972	50	95	
79	108793000	TSA	France	1977	400	294	
80	120286	New Korea	Korea	1981	630	450	
81	120298	New Korea	Korea	1981	630	450	
82	120294	New Korea	Korea	1981	630	450	
83	32235	New Korea	Korea	1983	630	450	
84	516480	Schorch	Germen	1936	100	160	
85	391066	Unelec	France	1972	50	95	
86	391111	Unelec	France	1972	160	178	
87	N/A	Unelec	France	1972	50	95	Estimated
88	N/A	Minel-Trafo	Yugoslovia	N/A	250	181	Estimated
89	Other					3,000	Approximate as barrels
					Total	**26,736**	

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