05-GF-113.0607(6)
(4740)

Plymouth Utilities
12 S. Milwaukee St. - P.O. Box 277
Plymouth, WI 53073-0277

CITY OF PLYMOUTH WISCONSIN
Wisconsin's Heartland . . . On the Grow

Telephone: **(920) 893-1471**
Facsimile: **(920) 892-2760**
Web Site: **plymouthgov.org**

12/03/2002

Mr. Jim Loock, Chief Electric Engineer
Public Service Commission
610 N. Whitney Way
P.O. box 7854
Madison, WI 53707-7854

RE: In the Matter of Filing Reporting Requirements for Appropriate Inspection and Maintenance, PSC Rule 113.0607(6)

Dear Mr. Loock:

Enclosed for filing are 3 copies of Plymouth Utilities report to the commission submitted every two years showing compliance with its Preventative Maintenance Plan.

Our three substations are inspected monthly with Substation # 1 needing attention. This Substation is to be replaced in the year 2003. For the year in sub 1 we had a total of 34 recloser operations on a total of six circuits (list of reasons is supplied). Substation # 2 had a total of 14 recloser operations on a total of six circuits (list of reasons is supplied). Substation # 3 had a total of 13 recloser operations on a total of five circuits (list of reasons is supplied). All other monthly checks in Substations 2 & 3 reported in excellent condition.

We inspected only 40% of our distribution system at this time. By this summer we should have at least 50%. It is taking us longer in some areas because we are replacing old box switches and gap arresters. Of the other items found requiring maintenance, all were repaired. We had a few storm-related outages affecting areas of residential and commercial customers. We are constantly working to improve our system. Last year we removed 10,000 feet of copper weld and 38,813 feet of bare 6 solid copper.

It is this utility's goal to have the new substation on line by June and to maintain our monthly inspection. In addition, we expect to finish the distribution inspection by January of 2005 as required. We will also be working on removing copper weld wire every chance we can.

Should you have any question on this please give me a call (920) 893-1471

Sincerely,

James R. Peterson
James R. Peterson
Asst. Line Supt.

SUBSTATION #1 REPORT INSPECTOR: Ross Eric DATE 3/28/02

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	19864	20216	352	-4	-11	155
B-PH	85910	86272	362	-4	-10	124
C-PH	83444	83814	370	-4	-11	136

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	17780	18138	358	-4	-9	104
B-PH	129065	129372	307	-4	-9	86
C-PH	112017	112217	200	-4	-9	95

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C
104 185 W 3C	293	293	—	6.5	4.0	6.5
105 225 W 3D 1999	118	118	—	55	54	68
106 225 W 3D 1999	112	112	—	52	38	36
107 225 W 3D 1999 IN SERVICE 10/5/99	160	160	—	72	54	59
133 225 W 3D 1999	485	486	1	80	81	84
180 185 W 1A3B	88	89	1	25	33	32

Had a line crew patrol both circuits 133 & 180 and found nothing to indicate reason for operation 4/01/2002 JRP

SUBSTATION #1 REPORT INSPECTOR: Russ Heric DATE 4/25/2002

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	20216	20547	331	1	11	164
B-PH	86272	86520	248	L 4	10	138
C-PH	83814	84112	298	L 3	11	146

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	18138	18420	282	L 1	10	99
B-PH	129372	129596	224	L 2	8	108
C-PH	112217	112390	173	L3	8	117

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C
104 185 W 3C	293	293	0	6.2	3.4	4.0
105 225 W 3D 1999	118	118	0	53	55	68
106 225 W 3D 1999	112	112	0	54	42	38
107 225 W 3D 1999 IN SERVICE 10/5/99	160	160	0	74	54	62
133 225 W 3D 1999	486	486	0	76	77	74
180 185 W 1A3B	86	89	3	22	28	38

Had line crew patrol circuit 180 again and found nothing to indicate reason for operation they thought may be tree branch, limb was removed. 04/25/2002 Jrp.

SUBSTATION #1 REPORT INSPECTOR: Rick DATE 5/31/2002

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	20547	20944	397	-4	-11	162
B-PH	86520	86851	331	-4	-11	145
C-PH	84112	84515	403	-5	-12	138

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	18420	18909	489	-3	-9	125
B-PH	129596	129903	307	-4	-9	136
C-PH	112390	112611	221	-4	-9	141

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C	
104 185 W 3C	293	293	-	5	3	5	
105 225 W 3D 1999	118	118	-	62	71	77	
106 225 W 3D 1999	112	112	-	48	38	36	
107 225 W 3D 1999 IN SERVICE 10/5/99	160	160	-	55	41	42	
133 225 W 3D 1999	486	486	-	100	103	98	1
180 185 W 1A3B	89	90	1	20	30	40	5

Line crew patrolled circuit 180 again and found nothing to indicate reason for operation 05/31/2002 Jrp.

SUBSTATION #1 REPORT INSPECTOR: Rick + Bill DATE 6/28/2002

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	20944	21236		[illegible]	-10	181
B-PH	86851	87057		-3	-10	135
C-PH	84515	84589		-5	-10	140

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	18909	19431		[illegible]	[illegible]	117
B-PH	129903	130104		[illegible]	[illegible]	150
C-PH	112611	112757		-2	-10	131

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C
104 185 W 3C	293	293	—	5	7	5
105 225 W 3D 1999	118	118	—	60	60	73
106 225 W 3D 1999	112	112	—	58	43	44
107 225 W 3D 1999 IN SERVICE 10/5/99	160	160	—	72	45	42
133 225 W 3D 1999	486	487	1	90	105	96 2
180 185 W 1A3B	90	90	—	25	37	39 5

Line crew patrolled circuit 133 found nothing to indicate reason for operation 06/28/2002
Jrp.

SUBSTATION #1 REPORT INSPECTOR: FALK/[illegible] DATE 7/30/02

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	21236	21652	416	+8	-9	166
B-PH	87057	87345	[illegible]	-9	-4	142
C-PH	84589	84961	[illegible]	-3	-10	139

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	19431	[illegible]	795	+3	-9	103
B-PH	130104	130396	[illegible]	-2	-8	[illegible]
C-PH	112757	112943	186	-1	-8	118

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C	
104 185 W 3C	293	293	—	3	1	2	
105 225 W 3D 1999	118	118	—	52	49	62	
106 225 W 3D 1999	112	112	—	53	38	36	
107 225 W 3D 1999 IN SERVICE 10/5/99	160	160	—	79	50	56	
133 225 W 3D 1999	487	[illegible]	[illegible]	84	99	87	16
180 185 W 1A3B	90	90	—	24	31	34	5

Storms and high winds in the month of July knocked some trees in the line. One sequence we patrolled the line and could not see any problem. Recloser was closed and held for a ½ hour before dropping out again. Patrolled line again and found tree in the wire. Jrp.

SUBSTATION #1 REPORT INSPECTOR: Bill DATE 8/29

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	21652	21993	341	-4	-10	157
B-PH	87345	87604	259	-4	-10	123
C-PH	84961	85285	324	[illegible]	[illegible]	140

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	20226	20881	655	0	-9	121
B-PH	130396	130644	248	[illegible]	[illegible]	134
C-PH	112943	113120	177	-2	-8	132

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C	
104 185 W 3C	293	293	—	4	2	3	
105 225 W 3D 1999	118	124	+6	54	51	65	6
106 225 W 3D 1999	112	112	—	35	35	32	
107 225 W 3D 1999 IN SERVICE 10/5/99	160	160	—	36	40	58	
133 225 W 3D 1999	501	503	[illegible]	100	155	90	18
180 185 W 1A3B	90	91	1	20	24	30	6

Storm came through 08/18/2002 lighting hit circuits 133 and 105 dropping a phase down between lower circuit 133. We de-energized both circuits to work on them. 105 did lay on the ground hot before crews found the problem, possible reason for extra operations. Jrp.

SUBSTATION #1 REPORT INSPECTOR: D REITZ DATE 10/30/02

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MIDDLE BAY REGULATORS

	LAST COUNT serviced in 9/20/96	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	22364	22721		0	12	182
B-PH	87915	88215		0	12	142
C-PH	85670	86046		0	12	168

SOUTH BAY REGULATORS

	LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	BUSS AMP READINGS
A-PH	21476	21815		0	10	111
B-PH	130927	131198		0	10	122
C-PH	113321	113527		0	9	110

RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	AMP READINGS A	B	C	
104 185 W 3C	293	293		6	1	6	
105 225 W 3D 1999	124	125	1	64	62	75	7
106 225 W 3D 1999	112	113	1	52	37	36	1
107 225 W 3D 1999 IN SERVICE 10/5/99	160	162	2	79	53	70	2
133 225 W 3D 1999	503	503		80	91	76	18
180 185 W 1A3B	91	91		21	30	34	6

Maintenance on reclosers was done 10/30-2002 to pull beehives out of reclosers trip levers; this is the reason for 3 operation cannot explain reason for second trip on circuit 107. Jrp

SUBSTATION #2 REPORT INSPECTOR Ross DATE 3/28

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR
201-400X NEW 1997-3E	57	57		9	9	9		
204-400X NEW 1997-3E	63	66	3	179	180	180		
205-400X NEW 1997-3E	64	64		57	55	55		
206-400X NEW 1997-3E	105	105		194	195	213		
233 - 400X NEW 1996-3E	126	126		102	91	98		
280-400X NEW 1997-3E	80	80		81	81	76		

3

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
13466	13824	358	3	5	25

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR Light Blue SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : 20

TANK PRESSURE: +1.5

LIQUID TEMP : 50

LIQUID LEVEL : 25
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	622	611	631
BUSHING OIL LEVEL	ok	ok	ok

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Primary line broke by dead-end shoe leaving the jumper holding the line up off the ground. When this accured the jumper was pulled tight against another phase wire opening the recloser on circuit 204. This happened 03/19/2002. Jrp

SUBSTATION #2 REPORT INSPECTOR Rick + Bell DATE 6/28/2002

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR
201-400X NEW 1997-3E	57	57	-	8	8	8		
204-400X NEW 1997-3E	66	68	2	148	162	170		5
205-400X NEW 1997-3E	64	65	1	61	61	59		1
206-400X NEW 1997-3E	105	107	2	210	195	205		2
233 - 400X NEW 1996-3E	126	127	1	122	110	122		1
280-400X NEW 1997-3E	80	80	-	107	108	104		

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
14468	14676		+3	-6	25°

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR BL
SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : 50°

TANK PRESSURE: 2 1/2

LIQUID TEMP : 68°

LIQUID LEVEL : 25°
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	656	638	656
BUSHING OIL LEVEL	OK	OK	OK

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

De-energized circuit 204 & 206 for new cable installation and testing of new urd cable 06/08/2002. Also storm damage 06/27/2002 lighting hit pole-breaking insulators. Jrp

SUBSTATION #2 REPORT INSPECTOR ERIC + R² DATE 7/30

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR	
201-400X NEW 1997-3E	57	57	–	[illegible]	[illegible]	[illegible]			
204-400X NEW 1997-3E	68	[illegible]	–	163	159	170			5
205-400X NEW 1997-3E	65	[illegible]	[illegible]	45	35	30			6
206-400X NEW 1997-3E	107	107	–	[illegible]	[illegible]	[illegible]			2
233 - 400X NEW 1996-3E	127	[illegible]	–	[illegible]	[illegible]	[illegible]			1
280-400X NEW 1997-3E	80	80	–	[illegible]	[illegible]	[illegible]			

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
14676	15015	339	+3	-5	ABOVE [illegible]

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR [illegible] IS, SHOULD BE BLUE [illegible] WHITE,

TRANSFORMER
NEW 1996

WINDING TEMP : 70

TANK PRESSURE: +1

LIQUID TEMP : 63

LIQUID LEVEL : ABOVE [illegible]
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	610	586	601
BUSHING OIL LEVEL	✓	✓	✓

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Lighting storm hit pole on circuit 205, damaged wire and also transformer on the pole. This caused recloser to operate. Recloser was open manually. Jrp

13634
13349
285

SUBSTATION #3 REPORT INSPECTOR Rick DATE 2/26/2002

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR
310-400X NEW 1996-3E	100	101	1	150	155	158	-	-
320-400X NEW 1996-3E	75	75	-					
330-400X NEW 1996-3E	69	69	-	21	10	8		
335-400X NEW 1999-3E	181	181	-	52	50	91		
340-400X NEW 1996-3E	93	93	-	65	73	68		

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
13349	13634	285	+8	-1	25°

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR BLUE
SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : 22°

TANK PRESSURE: -1½

LIQUID TEMP : 25°

LIQUID LEVEL : 25°
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	285	288	275
BUSHING OIL LEVEL	½	½	½ ½

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Month of February one recloser count on circuit 310 nothing was done to check this out have no reason for outage. 02/26/2002 jrp

SUBSTATION #3 REPORT INSPECTOR Ferg DATE 5/31/2002

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR	
310-400X NEW 1996-3E	101	101	–	138	142	143			1
320-400X NEW 1996-3E	75	75	–	122	105	126			
330-400X NEW 1996-3E	69	75	6	21	9	7			6
335-400X NEW 1999-3E	181	181	–	75	69	55			
340-400X NEW 1996-3E	93	93	–	106	112	112			

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
14207	14568	361	+5	-2	25°↑

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR Blue
SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : 40°C

TANK PRESSURE: +1

LIQUID TEMP : 40°C

LIQUID LEVEL : 25°↑
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	444	418	434
BUSHING OIL LEVEL	✓	✓	✓

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Thunder storm 05/30/2002, lighting struck power line and burned one phase down and damaging another. Also cutouts and arresters where damaged on three phase station pole bank. Jrp

SUBSTATION #3 REPORT INSPECTOR Bill & Rick DATE 6/28/2002

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR	
310-400X NEW 1996-3E	101	102	1	160	162	163	-	-	2
320-400X NEW 1996-3E	75	75	-	116	100	118	-		
330-400X NEW 1996-3E	75	75	-	47	30	29	-		6
335-400X NEW 1999-3E	181	181	-	87	80	68			
340-400X NEW 1996-3E	93	93	-	104	115	116			

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
14568	14813		-3	+8	25°

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR Blue
SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : 50

TANK PRESSURE: 1/2

LIQUID TEMP : 50

LIQUID LEVEL : 25°
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	496	467	488
BUSHING OIL LEVEL	[illegible]	[illegible]	[illegible]

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Storm damage week of the 10 of June, Johnsonville lost their fuses also. Jrp

SUBSTATION #3 REPORT INSPECTOR GRIC + R2 DATE 7/30

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR	
310-400X NEW 1996-3E	102	102	—	194	196	204			2
320-400X NEW 1996-3E	75	75	—	157	121	141			
330-400X NEW 1996-3E	75	75	—	54	34	32			6
335-400X NEW 1999-3E	181	[redacted]	[redacted]	129	109	95			1
340-400X NEW 1996-3E	93	93	—	105	169	120			

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
14818	15113	295	+9	-0	ABOVE 25

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR BLUE
SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : 50

TANK PRESSURE: +1

LIQUID TEMP : 50

LIQUID LEVEL : ABOVE 25
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	642	629	592
BUSHING OIL LEVEL	✓	✓	✓

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Have no reason other then lighting strike. Jrp

SUBSTATION #3 REPORT INSPECTOR Bill DATE 8/29

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RECLOSERS

CKT NUM	LAST COUNT	NEW COUNT	COUNT CHANGE	A-PH	B-PH AMPS	C-PH	OIL LEV	TAR
310-400X NEW 1996-3E	102	102	–	[illegible]	[illegible]	[illegible]		2
320-400X NEW 1996-3E	75	76	1	[illegible]	[illegible]	[illegible]		1
330-400X NEW 1996-3E	75	78	3	[illegible]	[illegible]	[illegible]		9
335-400X NEW 1999-3E	182	182	–	92	[illegible]	[illegible]		1
340-400X NEW 1996-3E	93	93	–	[illegible]	82	82		

LOAD TAP CHANGER

LAST COUNT	NEW COUNT	COUNT CHANGE	RAISE STEPS	LOWER STEPS	OIL LEVEL
15113	[illegible]	276	[illegible]	[illegible]	[illegible]

MAKE SURE TO CHECK FILTER ON TRANSFORMER MARK THE COLOR [illegible]
SHOULD BE BLUE

TRANSFORMER
NEW 1996

WINDING TEMP : [illegible]

TANK PRESSURE: – 1

LIQUID TEMP : [illegible]

LIQUID LEVEL : 25°C
(25 C =77 F)

	A-PH	B-PH	C-PH
AMPS	[illegible]	[illegible]	[illegible]
BUSHING OIL LEVEL	✓	✓	✓

AMP READING ON TRANSFORMER BUSS TO BE TAKEN WITH AMP METER

Storm 08/18/2002 Lots of lighting. Jrp