

! " # \$ % & ' () * +
\$ % , - . / 0 1 2 3 4
5 4 6 7 8 \$ 9 : ;

< = > ?

! " # \$ % & ' () * + , - . / 0 1 2 3 4 5 6 2 7 8 9 : * ; < = > ? @ A = > B C * D E
. F G H 0 1 4 5 I J = > K L 9 : A 6 2 2 M % = N 8 * O P Q R S 0

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@)
A @)
B C

n 6 2 o U p q r s | - v N

2 3 n 2 * 6 2 Q M - . / 0 * T 208 n 6 2 o U p q r s ^ " f M
* * • 2 3 Q # n 6 2 o U p q r s 5 t 1 y z

o U p q r ^ \$ l # 6 2 \ 3 7 8 ~ • X z 6 2 Q M 4 1 2 6 2 Y
5 o U A > [# J / 0 * 2 I # o U a { p q r
(u * + X ~ * 0) # 0 P { " | p q r # * ^ t 2 y z

*) # n 6 2 o U p q r s 6 2 Q M * a 4 | Q 6 2 z

6 2 V W } # n 6 2 o U p q r s n (6 2 z 6 2 Q M |
. 6 * { o U 5 o U p q r t w # • y * ~ o U
2 M \ 3 f 2 = > ~ • ! > z

1

业指导书》

$$Q \quad \times \quad N$$

6 2 N

[illegible]

业指设置》

6 2 o U p q r x	
6 2 o U p q r	
J O P N	

表 分

u o 6 p q v w x y 

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X Y

1	%	3
2	;	3
3	o U \ 3	3
4	>	4
5	o U •	5
6	o U a	6
7	7 8 k 6 ! B ~ •	7

1 Z [\]

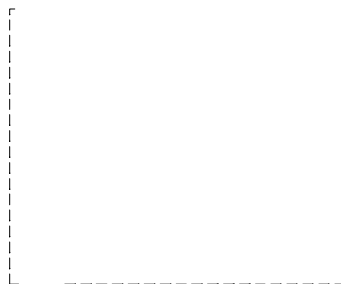
7 o U p q r Q T U V 0 W < X Y z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408 1991n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys

3 0 1 a b





! " # \$ % & ' ()

, - . / 0 1 2 3 4

4 e j k l m

4.1 0 W < X Y Z [A 2 Q M ! Q o U e " 6 2 #

2 > p ` s t v w x n n (1 2 3 > \$ % 2 o * • ! e " #

4.2 ` s ^ T U V T j - 0 . 2 4 T c (U V) 1 2 0

2 o

5 0 1 n o

5.1 M N p o

` 5-1 0 1 M N p o

2	x	2	4	2 o V	1	+ d V	D V
---	---	---	---	-------	---	-------	-----

8 K 8 K

8 K A B 8 K A B

2

1

1



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! " # \$ % & ' () * + \$ % , - . / F 1 0 F 1 0

{ " 2 ? (_ # : = + X z

6.9 F y z a \$ a

w 8 { | 0 \ y \$ { / X 0 * A B Q / ^ B _ B u ^ / B _ B u _ ^ B / B u +
X * w 8 | ? (_ # : = * 0 % & ' (* { | 0 \ D ; < Z [~ • # \$ l z

6.10 \$ 9 : ; q : ; 5 4 6 7 8 \$ 9 : ; !

6.10.1 ~ R < • A B z 2 Q 35kV ! u v 0 X) < X Y * \$ _ X A ; v h 66kV ! u (0 X
) < X Y * \$ P Q R | w 8 ~ R S T U z

6.10.2 Z \ q X A B z { < X Y # : + X Z \ q X A B * 4 u 4 6 2 P 0 X # A B a * V
4 u ^ | 0 X # A B a z w 8 X o Y Z ^ | q X A B a V * 4 L M A B 5 P 8 z 0 X)
{ 110kV ! u (# < X Y ^ 3 7 \$ [+ X Z \ q X A B z A B 0 X ! | } Z [~ • + X z

6.10.3 ~ R 8 8 K # x y ^ | 0 X A B } z M { 0 A B z 0 X) { 220kV ! u (# < X Y * { @
> ? y + X x y ^ | 0 X } z M { 0 A B z 0 X) 110kV # < X Y * \ 2 b] ^ y *
\$ + X z M { 0 A B z u w < X Y 0 M _ # 3 # ` a z

6.10.4 l 0 X v # s [A B z b F a c \$ l m z

6.10.5 @ " z @ < X Y # " * 0 1 " , d z

7 m . r ; n

7.1 m .

7.1.1 T ^ e f = J # g U * z T y | { < X Y 6 T) * 7 \$ l # y a 4 + X z f T
* 8 9 f P Y * : ! y ; < " f M = B z

7.1.2 < X Y \ 0 v w 8 m 1600kVA ! u v 0 X) " < X Y * 4 " w # "] | Q :
! # 4 1 * : w # "] | Q : ! # 2 1 1600kVA u (" < X Y * 4 " w # "]
| Q : ! # 2 1 : w # "] | Q : ! # 1 1 z

7.1.3 < X Y # \ 0 v ' v h - w * " | < G D | Q 2 1 D ' (v 0 v
} V t 7-1 y) N

$$R_2 = R_1 \frac{T + t_2}{T + t_1} \quad t_{7-1y}$$

V ^ N

R₁ R₂ ' ({ t₁ t₂ t i y y # 0 v *

D

7-1 O P Q \$ R S T U \$ ~

' (K	5	10	15	20	25	30	35	40	45	50	55	60
) q A	1.2	1.5	1.8	2.3	2.8	3.4	4.1	5.1	6.2	7.5	9.2	11.2
N1. ^ K - w ' (L r 20 i # 2 z 2. w 8 ' (u (s T ' • z												

t 3 y < X Y 0 X) 35kV ! u (* , P 8 4000kVA ! u (y * | w 8 z h
" | + k * { ' v | D Q 1.3 \ R_{60s} Q 3000MΩ y * 4 D o + * m z
t 4 y < X Y 0 X) 220kV ! u (, P 8 120MVA ! u (y * \$ 5000V 0 v w 8
G p z w h " | + k * { ' v D Q 1.3 z \ R_{60s} Q 10 000MΩ
y * G p 4 D o + * m z

7.1.8 w 8 ~ R 8 8 K # 7 K e t a n d * | w s v p \$ l N

t 1 y \ < X Y 0 X) 35kV ! u (, P 8 8000kVA ! u (y * | w 8 7 K e t a n d z

t 2 y w ~ R # t a n d D | Q h A B # 130 1 z

t 3 y \ w 8 y # ' (h A B ' (D w s y * 4 7-2) 3 , ' (y # + X z

7-2 } t a n d " ! ~

' (K	5	10	15	20	25	30	35	40	45	50
) q A	1.15	1.3	1.5	1.7	1.9	2.2	2.5	2.9	3.3	3.7
N1. ^ K - w ' (L r 20 i # 2 z 2. w 8 ' (u (s T ' • z 3. + X # ' () , A B ' 2 ; < 7 # L t u \$ l y * + X v s * w E z										

7.1.9 w 8 ~ R 8 8 K # \ { | 0 \ * | w s v p \$ l N

t 1 y \ < X Y 0 X) 35kV ! u (* , P 8 8000kVA ! u (y * | w 8 \ { | 0 \ z

t 2 y A B 0 X ~ • | w s 7-3 # \$ l z \ 6] A B 0 X x 1min y * { / X 0 { | 0 \ z {
| 0 \ D \$; < 7-4 # \$ l z

7-3 O P Q \$ R S T U a : ; \$ T n

~ R l 0 X kV	6 y 10	20 y 35	63 y 330	500
\ A B 0 X kV	10	20	40	60
N1. ~ R l 0 X 13.8kV ! 15.75kV y * 10kV) ~ • 18kV y * 20kV) ~ • 2. *) < X Y Z A ~ R 0 X) # ~ • z				

7-4 S T U a T \$ a k \$ a

l 0 X kV	A B 0 X { kV	{ v p ' (y # ~ R { 0 \ μA							
		10 i	20 i	30 i	40 i	50 i	60 i	70 i	80 i
2 y 3	5	11	17	25	39	55	83	125	178
6 y 15	10	22	33	50	77	112	166	250	356
20 y 35	20	33	50	74	111	167	250	400	570
63 y 330	40	33	50	74	111	167	250	400	570

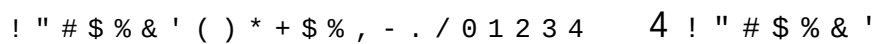
500 60 20 30 45 67 100 150 235 330

7.2 m `

` 7-5 m `

	k 7	k a v		
		W	H	S
1	< X Y A B			

N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z



j k Nt , y 7 & 5



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X Y

1	%	13
2	;	13
3	o U \ 3	13
4	>	14
5	o U •	15
6	o U a	15
7	7 8 k 6 ! B ~ •	16

4 e f g h i j k l m

4.1 T U V 0 \] ^ Y Z [A B * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6
2 > & • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z
4.2 n p ` s ^ T U V 0 \] ^ Y Z [A B " f o # n 0 1 4 5 > 6 2 o U & s t N
BDYCSY-ZW-02-01/01 y * ' s - . / 0 + X (G * * \ l) * = > W > 6 2
o U & * > W * * 6 2 + d V , ' z
4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U
V W + d > 6 2 - 3 4 o U e " A - ^ z
4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :
= @ > L o U & * { 2 o (Z Q M] ? @ z { o 5 z

t ? ~ R @ t S 3 @	3	1	1
< @	2	1	1
7 K ! 0 P 8 w 8	3	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	0 v w A v		MΩ	1	
2	p 1 V		/	1	
3	X A < X Y		/	1	
4	~ • 0 \] ^ Y		/	1	
5	Z \ B >		V/A	2	
6	K w A v		/	1	
N 2 Y ! v Y v J 2 3 8 \$ J z					

6 0 1 # u

A B C D 0 \] ^ Y N t ! y E F _ G z

6.1 w 8 0 \] ^ Y # 0 v z 2500V 0 v w 8 , ? ~ R 2 t ? ! u # 0 v 2500V

0 v * w 8 t ? ~ R ! u # 0 v 0 v D \$ _ Q 1000MΩ z

6.2 w 8 0 P V 0 \] ^ Y # # 0 v * 0 v D \$ Q 1000MΩ 2 u 0 v
Q 1000MΩ y * | w 8 t a n d z

6.3 0 \] ^ Y # 3 @ z A B : H 0 I A 0 \] ^ Y # , ? ~ R 8 [* p 1 t J {
{ 3 0 \ J (y # K * [{ w # t ? ~ R (z H 0 I # B : I [3 , ? ~ R # L 1 *
y) L p 1 # p 1 M 5 N e a * 3 0 0 F z : P n H 0 I # B A B : * y
) L p 1 # p 1 M 5 N + a * 3 0 0 F z

6.4 0 \] ^ Y , t ? ~ R \ 0 v w 8 z

6.5 w 8] D R T A # @ t S 3 Q : z A B y 0 X T R F (r * u 0 \ & • * 0 0 X * <
l 0 \ *] D R | + X S Q A B z

6.6 < @ z { , ? ~ R H " 0 \ * t ? ~ R [0 \ * 0 , t ? ~ R 0 \ z

6.7 K K ! 0 P 8 w 8 N , ? ~ R 2 # K | D Q # 1301 t T 0.51 y * 0 P
8 # D ; 051 2 t ? ~ z K #

7.2 m `

` 7-1 m `

	k 7	k a v		
		w	H	S
1	T U V Ø \] ^ Y A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

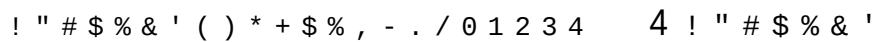
7.3 ; n
7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
^ # Q/CK

1 > 6 2 o U &

B 8BDYCSY-ZW-02-01/01

2 o y		2 o u 7		= > W	> W	+ d V
> * ! k 6						
	A B x	C D	)	k 6		
1	A c 0	q 0	! _			
2	/ X A B < 3 ^ ' 0 X	5 " K	! ^			
3	A B 0 u D H l	5 g K	! ^			
4	A B n o a 5 > p	q 0	! ^			
5	/ X A B < 3 ^ % 6 D 3	q 0	! /			
6	/ o U > D 6 D	2	! /			
7	A B 0 u D H l	5 g K	! ^			
8	A B 5 a [u [u D b	5 g K	! _			
9		5 " K	! ^			
10	[A B 0 u y q 0	V W X Y	! /			
11	0 \] ^ Y t ? # n ;	5 K L	! ^			

12 E T } 0 5
> U m D V H q 0 T D V D V) T j / F 1 9 . 1 j / F 5 + 4 9 C 2 T j / F 5 + 4 9 . 1 2



j k Nt , y 7 & 5 => W * > W ** + d V , ' 1 z + d V n 2 * 2 k 6
0 2 0 zt t y 2 o 0 P u 7 > 6 D < y 7 & 3 x 4 4 : * 5 6 | = @ > & * (Z @ \ V W ' <
7 y * | { p % & < 7 / 0 z 2 @ V W + X Z 0 * 0 , \ \ zt y | # % A *) >
R Ȳ R y
> & y 7 , (y) T j / F 9 . 1 2 7 4 n n 5 f 9 . 1 2 0 T D ! M i o y 7



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X Y

1	%	19
2	;	19
3	o U \ 3	19
4	>	20
5	o U •	21
6	o U a	21
7	7 8 k 6 ! B ~ •	22

1 Z [\]

7 o U p q r Q _ V 0 \] ^ Y z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A ~
2	DL 408 1991 n 0 U > 2 o \$ 3 t ' 0 A < 0 C = M

3 0 1 a b

c3-1 01 /d!a b c

交流耐压

4 e f g h i j k l m

4.1 _ V 0 \] ^ Y Z [A B * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6 2
> & • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ _ V 0 \] ^ Y Z [A B " f o # n 0 1 4 5 > 6 2 o U & s t N
BDYCSY-ZW-03-01/01 y * ' s - . / 0 + X (G * * \ l) * => W > 6 2
o U & * > W * * 6 2 + d V , ' z

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U
V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :
= @ > L o U & * { 2 o (Z Q M] ? @ z 6 b * 6 2 10 * 2 o 1

}} Y 4 M () T J (F 5 6 . 3 2 0 2 . 9 0 2 . 0

~ R \ 0 v w 8	2	1	1
t ? ~ R @ t S 3 @	3	1	1
< @	3	1	1
7 K ! 0 P 8 w 8	3	1	1
Z \ q X A B	4	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	0 v w A v		MΩ	1	
2	p 1 V		/	1	
3	X A < X Y		/	1	
4	~ • 0 \] ^ Y		/	1	
5	Z \ B >		V/A	2	
6	" X Y			1	
7	F \ Y			1	
8	A B < X Y		/	1	
N 2 Y ! v Y v J 2 3 8 \$ J z					

6 0 1 # u

6.1 A B C D 0 \] ^ Y N E F _ G z

6.2 w 8 0 \] ^ Y # 0 v z 2500V 0 v w 8 , ? ~ R 2 t ? ! u # 0 v 2500V
0 v * w 8 t ? ~ R ! u # 0 v 0 v D \$ _ Q 1000MΩ z

6.3 w 8 0 \] ^ Y # # 0 v * 0 v D \$ Q 1000MΩ z 2 u 0 v Q
1000MΩ y * | w 8 tand z

6.4 0 \] ^ Y # 3 @ z A B : H 0 I A 0 \] ^ Y # , ? ~ R 8 [* p 1 t J {
{ 3 0 \ J (y # K * [{ w # t ? ~ R (z H 0 I # B : I [3 , ? ~ R #
L1 * y)

b] ^ y * | . / 6] # w 8 0 \ * w 8 0 \ t \ y , U D \$; < l 0 \ t a ! y # 501 z
7.1.3 w 8] D R T A # @ t S 3 Q : N D 0 \] ^ Y # S 3 "] * | + V z
7.1.4 < @ | k " * s " w z
7.1.5 0 \] ^ Y q X A B 8 n f 7 J A B , Q + X * { \$ l A B 0 X v 1min * D * + (o z
7.2 ; n
7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
^ # Q/CSG 4-8.1.1 y 4-8.1.3 Q/CSG 4-8.2.1 y 4-8.2.4 m X z



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

1 > 6 2 o U &

NBDYCSY-ZW-03-01/01

2 o y

2 o u 7

= > W

> W

+ d V



4 ! " # \$ % & '

$$> \quad) \quad Q / : N \ 0$$
 $[1 \ Z \ 0 \ V \ W \ ,$

1							



4 ! " # \$ % &

X Y

1	%	25
2	;	25
3	o U \ 3	25
4	>	26
5	o U •	27
6	o U a	27
7	7 8 k 6 ! B ~ •	28



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5.1 M N p o

` 5-1 0 1 M N p o

2 x	4 2 o V	+ d V	D V
0 v w 8	2	1	1
3 @	2	1	1
~ R \ 0 v w 8	2	1	1
t ? ~ R @ t S 3 @	3	1	1
< @	3	1	1
SF ₆ = J 8 9 3 A B	2	1	1
Z \ q X A B	4	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	0 v w A v		MΩ	1	
2	p 1 V		/	1	

3 461.04 TD (2) Tj/* 0 TD17.524 TD (2) Tj/* 0 TD17.524 TD (2)IN2s &'s wAs / 1

7.1 m .

7.1.1 w 8 0 v N | w s \$ 3 A h = > m z

7.1.2 \$? 0 \] ^ Y , t ? ~ R # \ 0 v A : ! # (D \$ Q 1 0 1 z \ b] ^ y * | . / 6] # w 8 0 \ * w 8 0 \ t \ y , U D \$; < l 0 \ t b 1 y # 5 0 1 z

7.1.3 w 8] D R T A # @ t S 3 Q : N D 0 \] ^ Y # S 3 "] * | + V z

7.1.4 < @ | k " * s " w t 0 \] ^ Y # < (# B * { y b d + X < A B * > ? y D / b < G z { Z [A B y * 2 < A B * c M c Q * 2 3 @ * D 0 \] ^ Y A B Y d @ y z

7.1.5 0 \] ^ Y q X A B 8 n f 7 J A B , Q + X * { \$ l A B 0 X v 1 min * D * + (o z

7.2 m `

` 7-1 m `

	k 7	k a v		
		W	H	S
1	SF ₆ 0 \] ^ Y A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

7.3 ; n

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
^ # Q/CSG 4-7.1.1 y 4-7.1.3 Q/CSG 4-7.2.1 y 4-7.2.4 m X z

1 > 6 2 o U &

NBDYCSY-ZW-04-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	A c 0	q 0	! _	
2	/ X A B < 3 ^ ' 0 X	5 " K	! ^	
3		5 " K	! ^	
4	/ o U > D 6 D	2	! /	
5	A B 0 u D H l	5 g K	! ^	
6	/ X A B < 3 ^ % 6 D 3	q 0	! /	
7	A B n o a 5 > p	q 0	! ^	
8	[q S F ₆ = J < [^ \	e f X B	! _	
9	A B 5 a [u [u D b	5 g K	! _	
10	A B 5 E ? y > D 6 D	5 " K	! /	
11	[A B 0 u y q 0	V W X Y	! /	

12 0 \] ^ Y t ? V W X c 5
n ; q r

>) Q/: N 0							
[1 Z 0 V W ,							
>W/F1 9.15+3 Tf18.24 re8080 #\$/F1 9.15+2 Tf18.24 080 6D/F1 9.15							



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4 ! " # \$ % & '

U V W : ; 0 1 2 3 4

N BDYCSY-ZW-05

1 Z [\]

7 o U p q r Q ` a E ; Y z

2 B L ^ _

` 2-1 B

1	GB 50150 2006 n 0 = ? > ? 2 3 0
2	DL 408 1991 n 0 U > 2 o \$ 3 t ys

3 0 1 a b c3-1 01 /d!abc 4 efghijklm 4.1 `aE; bUe" 62#A\*|}n014562>M& • qrp`stvwxnp`sy102199Tf

	A B x	C D	)	k 6
5	A B 0 u D H l	5 K L	^	A B v Y w 8 0 u 0 X * \] w s A B m
6	A B 5 E ? y > D 6 D	5 K L	/	E ? y 2 o V W 6 0 (P g V p M E ?



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! " # \$ % & ' () * + \$ % , - . / 0 1

! " # \$ % & '

4

c

1

AB<XY XYR , D/XZ\ ; o /XZ\0u** 2E;YC"#s[st2
u*[stE#+XqXABt JABa •Sx3ABZ\qXABM*yz

7 m . r ; n

7.1 m .

7.1.1 w8E;Y q #* s[y *w8* s[# _3*w8s[<3^q [q #vZ
y z

7.1.2 w8 Py# 0v *D|_Q 1200MΩz

7.1.3 w8C"q0 ;#0v |wsh =># # \$lz

7.1.4 Z\qXABz|{E;Ys[!*[stv+XZ\qXAB \{s[stv+Xy*AB
0X|ws 7-1#\$l \{*[stv+Xy*`azj{E# #AB0X|wsh =>#
#\$l*AB^D|' # 3{0z

7-1 V a T : ; \$ T

l 0 X kV	3 / 2 0 0 X kV	1min 2 P q 1 0 X { *kV			
		" 2 u	"	E ; Y E #	l m E #
3	3.6	25	25	25	27
6	7.2	32	32	32	36
10	12	42	42	42	49
35	40.5	95	95	95	118
66	72.5	155	155	155	197
110	126	200	200	200	225
		230	230	230	265

7.1.5 w8E;Y q #* s[y *w8* s[# _3*w8s[<3^q [q #vZ
y z

7.1.6 s[<3^q [q #vZy N40.5kV uvE;YD| Q 2ms 40.5kV !u(E;YD|
Q 3msz

7.1.7 w8|{E;Y l5o0X!|X# v+Xz

7.1.8 -w |wsh =># # \$lz

7.1.9 w8* s[:k!s[[qY:k# 0v *D|_Q 10MΩ \0v h A
B " | +k z

7.1.10 E;Y5Fgi#AB*|wsvp\$ln

t1y s[5o#5o0X{851y1101Uny5Fgi|4<Foz

t2y *[5o#5o0X{ Q 651Uny*|4<u*[\ Q 301Uny*D|*[z

7.2 m `

7-2 m `

	k 7	k a V		
		W	H	S
1	`aE;YAB			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

7.3 ; n

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s

^ # Q/CSG 4-11.1.1 Q/CSG 4-11.2.1 y 4-11.2.2 m X z

1 > 6 2 o U &

NBDYCSY-ZW-05-01/01

2 o y		2 o u 7		= > W	> W	+ d V
> * ! k 6						
	A B x	C D	)	k 6		
1	A B V W [: ^	5 g K	! ^			
2	A c 0	q 0	! _			
3	/ X A B < 3 ^ ' 0 X	5 " K	! ^			
4	A B 5 a [u [u D b	5 g K	! _			
5	A B 0 u D H l	5 g K	! ^			
6	/ o U > D 6 D	2	! /			
7	5 ? { ^ 0	q 0	! ^			
8	A B 0 u D H l	5 g K	! ^			
9	g h Z F M *	X 2	! ^			
10	/ X A B < 3 ^ % 6 D 3	q 0	! /			
11	A B n o a 5 > p	q 0	! ^			
12		5 " K	! ^			

13 199.2B %i 6 D

> X X F 5 9.12 Tf 9.12 0 TD (Mx) T0pF5+4 9.12 Tf 18 0 T T8 rersF5+4 9.12 Tf 9.12 0D 4(

>) Q/: N 0							
[1 Z 0 V W ,							

j k Nt , y 7 & 5 => W * > W * * + d V , ' 1 z + d V n 2 * 2 k 6
 0 2 0 zt t y 2 o 0 P u 7 > 6 D < y 7 & 3 x 4 4 : * 5 6 | = @ > & * (Z @ \ V W ' <
 7 y * | { p % & < 7 / 0 z 2 @ V W + X Z 0 * 0 , \ \ zt y | # % A *) >
 Q : N 0 ± 8 y \) & •) D , d y * Q M | R S " f V W = @ + X \$ % 0 k l 6 ± 9 y
 & •) k 6 { n 2 : ; zt < y , D = t N > , # y ! o } & • L z



1 Z [\]

7 o U p q r Q 0 P V 8 K z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408 1991n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys

3 0 1 a b c3-1 01 /d!abc 4 efghijklm 4.1 0PV8KZ[AB4*62Q5M67!Q5oUe" 62#A*|]n014562>M& • qrp`stvwxnp`syn(123>I



4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	A B 5 a [u [u D b	5 K L	—	A B * \ ` @ [u : 8 [4 < * [u b f
2	A B n o a 5 > p	V W X c	^	A B n o \$ l 5 > p A ~ r s > 6 * 0 > >

3T

6 0 1 # u

6.1 8 K A n < [u z

6.2 8 K # 0 v w 8 z 2500V 0 v * w 8 q 0 D 2 A 2 t u y #
0 v z

6.3 8 K # 7 K e A 0 P w 8 z 7 K w 8 v * w 8 8 K # q 0 D 2 8 K 8 K
2 7 K e A 0 P e [w 8 q 0 D 2 8 K 7 K e A 0 P [w
8 2 t u y 7 K e A 0 P z w 8 y % & A B ' 2 A ' (? (z

7 m . r ; n

7.1 m .

7.1.1 A B < 3 ^ I L _ G z

7.1.2 A B 5 b c 4 5 > 4 < [u z

7.1.3 A B [: e \ * / X : W 4 q A * 0 A 8 [n o * / X : K : [u : D q ~ S
Z • z

7.1.4 66kV ! u (# 0 P 8 K * | w 8 X 8 K 2 w 8 8 K 2 # 0 v z
2500V 0 v w 8 * 0 v D | _ Q 1000MΩ z

7.1.5 w 8 20kV ! u (_ 8 K # 7 K e tand A 0 P * | w s v p \$ l N { {
' D _ Q 10 i # # v * 8 K # 7 K e tand D | Q 7-1 # \$ l z

` 7-1 y z } tand n

8 K D		tand 3
0 P V	T U l	0.7 t 500kV 8 K 0.5y
	U l	0.7
	l	1.0 t 66kV ! u v 0 X) 8 K 1.5y
		1.5
	= J	1.5
	b g * s	0.7
p # 0 X q ~ x 0 X z 2 20kV ! u (0 P V) l 8 K # h * tand 4 2 2.5z b g * s 8 K # K A B * \$ { _ v + X z N 0 P V 8 K # - w 0 P 8 h * s A B " * { 0 5 1 % 0 z		

7.2 m `

` 7-2 m `

		k a v
--	--	-------

7.3 ; n

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s

^ # Q/CSG 4-1.1.10 Q/CSG 4-1.2.6 m X z

1 > 6 2 o U &

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2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	A c 0	q 0	! _	oU X"f> \$3!> => 6*0 =7f lDcQuv 6N ! [AB vYw80u0X*\]wsAB mz ! AB * \` @[u:8[4<*[ubfz ! n`AB 5+dV\` @AB[:z ! ABno \$l5 > pA~rs > 6*0>t gV+X Dz ! }\$l\35oz ! ABn`y* H oUVW*05 > p* gV S 5oVW 4{ VW* 3 4un`*a4FX* b(   E0z ! /a: T /[:* oUVW /oUy* e\ > }* z ! oUVW Yy > } *D e•V 2 * Ne\ 2 z ! } h=>jkr5o*e\ 2Y z ! ABVWe\ # 2 > D z ! AB * !y2 A ) *{0*{0 # [u: 4<[uz ! ABVWfn{=}z ! pM HNgV60(P QE @E oU< 3^RSou\$%z ! X0=2o&*2-4Q> 6*]6 Dz ! AB '\` @*\`([:d)*+y[u :d(, * +- .2 A/e
2	/XAB<3^ ' 0X	5 "K	! ^	
3	/XAB<3^ % 6D3	q 0	! /	
4	ABnoa5 > p	q 0	! ^	
5	AB0uDHL	5 gK	! ^	
6		5 "K	! ^	
7	\$t{ SF ₆ =J	^ \	! _	
8	SF ₆ =J{	= x y	! 4 [1 #	
9	/oU> D 6D	2	! /	
10	AB5 a[u [uD b	5 gK	! _	
11	AB5 E?y > D 6 D	5 "K	! /	
12	[AB 0uyq0	VWXY	! /	

>) Q/: N 0							
[1 Z 0 V W ,							



GIS HGIS V W : ; 0 1 2 3 4

N BDYCSY-ZW-07

1 Z [\]
7 o U p q r Q GIS t HGIS yz
2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408 1991 n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys

3 0 1 a b



4 e f g h i j k l m

4.1 GIS(HGIS)Z [A B * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6 2 >
& • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

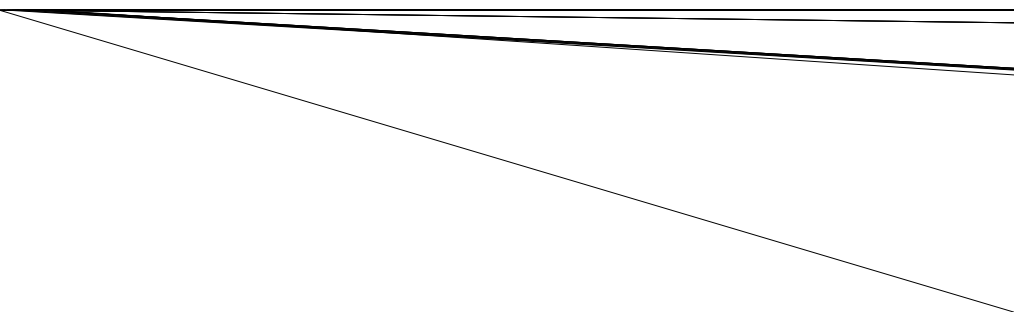
4.2 n p ` s ^ GIS(HGIS)Z [A B " f o # n 0 1 4 5 > 6 2 o U & s t N

BDYCSY-ZW-07-01/01 y* ' s - . / 0 + X (G * * \ l • @ (4 6) 4 6 j 4 F } 2 T 4 0 0 5 8 5 2 f /





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$$>) \quad Q / : N \Theta$$
 $[1 \ Z \ 0 \ V \ W \ ,$



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! " # \$ % & ' () * +

X

Y

1	%	53
2	;	53
3	o U \ 3	53
4	>	53
5	o U •	55
6	o U a	55
7	7 8 k 6 ! B ~ •	56

1 Z [\]

7 o U p q r Q b c d G e f g Y z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408 1991 n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys

3 0 1 a b

c3-1 01 /d!abc 4 efghijklm 4.1 bcdG0fgYZ[AB4*62Q5M67!Q5oUe

查

4.4 e f . / 0 1 . / (M & / 0 < = S [10 10
0 1 / 0 V X 6 o
4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	A B 5 a [u [u D b	5 K L	—	A B * \ ` @ [u : 8 [4 < * [u b f

3	{ 0 3 B v			1	
4	>		D	1	
N 2 Y ! v Y v J 2 3 8 \$ J z					

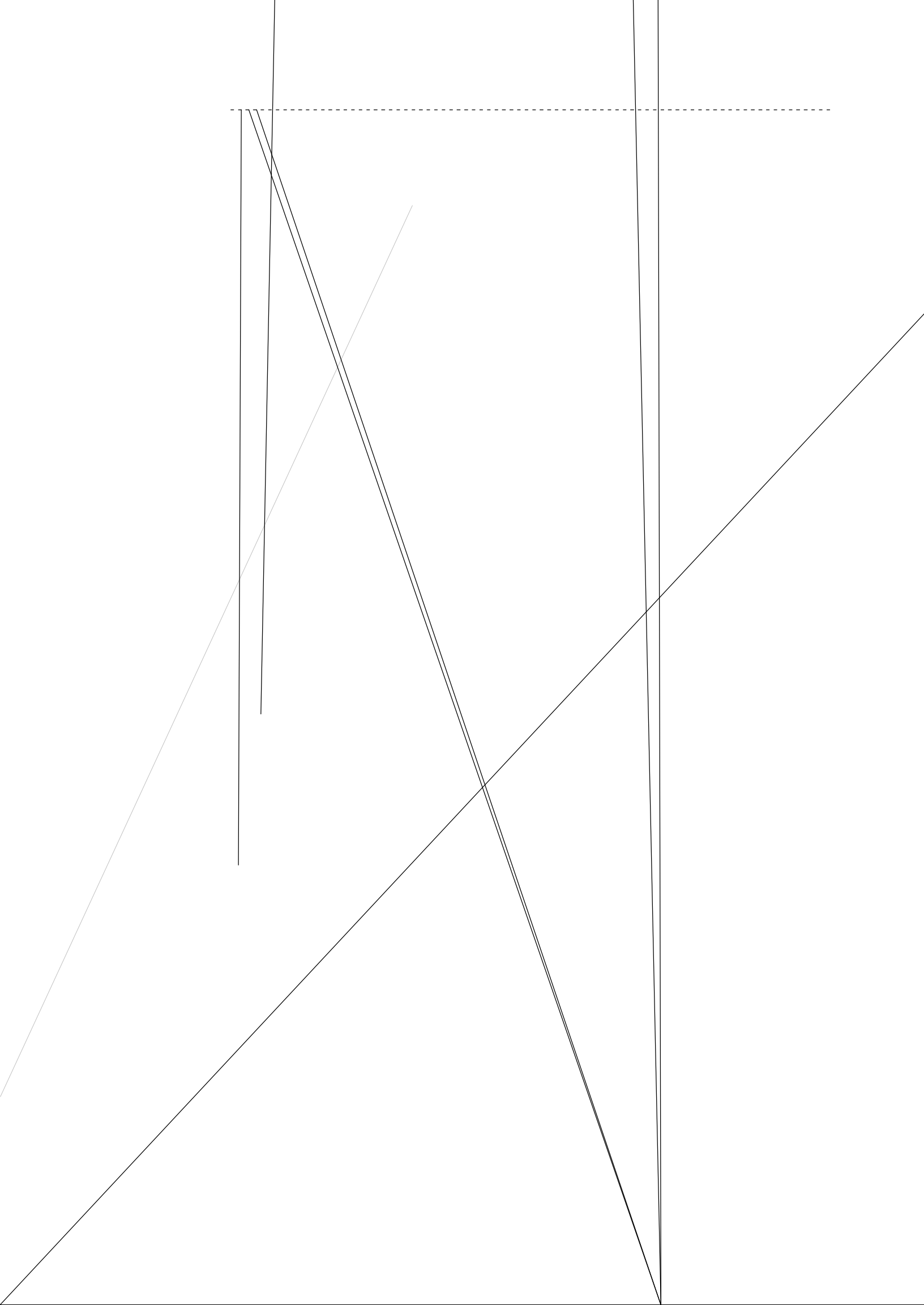
6 0 1 # u

6.1 \$:
0 v w A R S f g Y 7 J A 0 # 0 v w A * J O P • 6-1 z

` 6-1 \$:

	2 o 0 P	5 o ! 2 M
1	0 { 0 v 0 v @	s * 0 v 9 : { H * A B 2 0 v 7 W + X @
2	8 [w A : A [u :	0 v # [u A f g Y # u : 8 [* } K # 8 [: [3 A f g Y w 8 M t y [(K y
3	n ` w 8 * 0 0 % & w 8 ' 2	b F 0 v * 2500V w 8 f g Y 7 J A 0 # 0 v 0 60s # w 8 0 % &
4	} % w 8 * A A ; { 0 0 [u	} % w 8 * A A ; { 0 0 [u

6.2 a 1mA \$ T 0.75U_{1mA} \$ a :
B B R S N w



1 > 6 2 o U &

B 8BDYCSY-ZW-08-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				

A B x C D) k 6

>) Q/: N 0



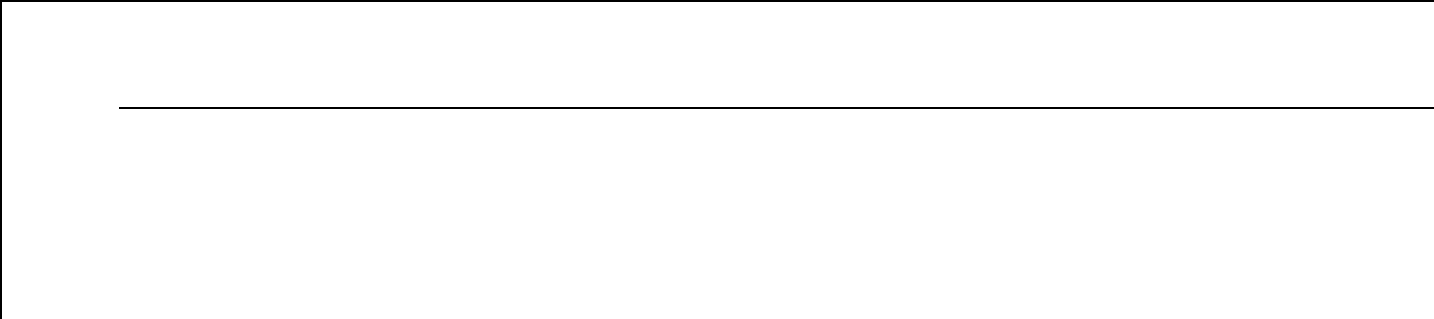
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X Y

1	%	61
2	;	61
3	o U \ 3	61
4	>	61
5	o U •	62
6	o U a	63
7	7 8 k 6 ! B ~ •	64

	A B x	C D	)	k 6
5	[A B 0 u y q 0	V W X Y	/	X 0 = 2 o & * 2 - 4 Q > 6 *] 6 D
6	A B 0 u D H l	5 K L	^	A B v Y w 8 0 u 0 X * \] w s A B m
7	A B 5 E ? y > D 6 D	5 K L	/	E ? y 2 o V W 6 0 (P g V p M E ?
8	T x y	9 x y 2 o x y	^	f z T { } T ~ ^ ? { l 7 • L A B n ` y * H o U V W * 0 5 >
9	/ X A B < 3 ^ % 6 D 3	V W X c	/	



6.6 F y z } tand

6.6.1 A B y * K v / X A B : } a * D 0 h Y 5 J [q z

6.6.2 % & f A B y # ' (*) < " ' (y * D | Q # 1.3 G z w 8

2 * | H I J 8 K q : K 8 K * L M 8 K # N { | 0 \ z w 8 \$ { " 2 ? (_ # : = + X z

6.7 F y z a \$ a

w 8 { | 0 \ y \$ { / X 0 * w 8 | " 2 ? (_ # : = * 0 % & ' (* { | 0 \ D ; < Z [~ • # \$ l z

6.8 V a T : ;

{ 0 h Y # : + X Z \ q X A B * 4 u 4 6 2 P 0 X # A B a * V 4 u ^ | 0 X # A B a z w 8 X o Y Z ^ | q X A B a V * 4 L M A B 5 P 8 z 0 X) { 110kV ! u (# 0 h Y ^ 3 7 \$ [+ X Z \ q X A B z A B 0 X ! | } Z [~ • + X z 0 h Y Z \ q X A B y * | H 8 K T A D n ; z

6.9

6.9.1 @ = J C 0 Y > ? f * 500V 0 v @ = J C 0 Y q 7 * F v = J C 0 Y

A B * @ = J C 0 Y q 7 s b f z

6.9.2 @ g b f * H 0 Z X g * g r e \ Z b € X \ 0 g & ' • ! "

6

6 * bf g Z



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

t 3 y 0 h Y 0 X) 35kV ! u (, P 8 { 4000kVA ! u (y * | w 8 z h
" | + k * { ' v | D Q 1.3 \ R_{60s}

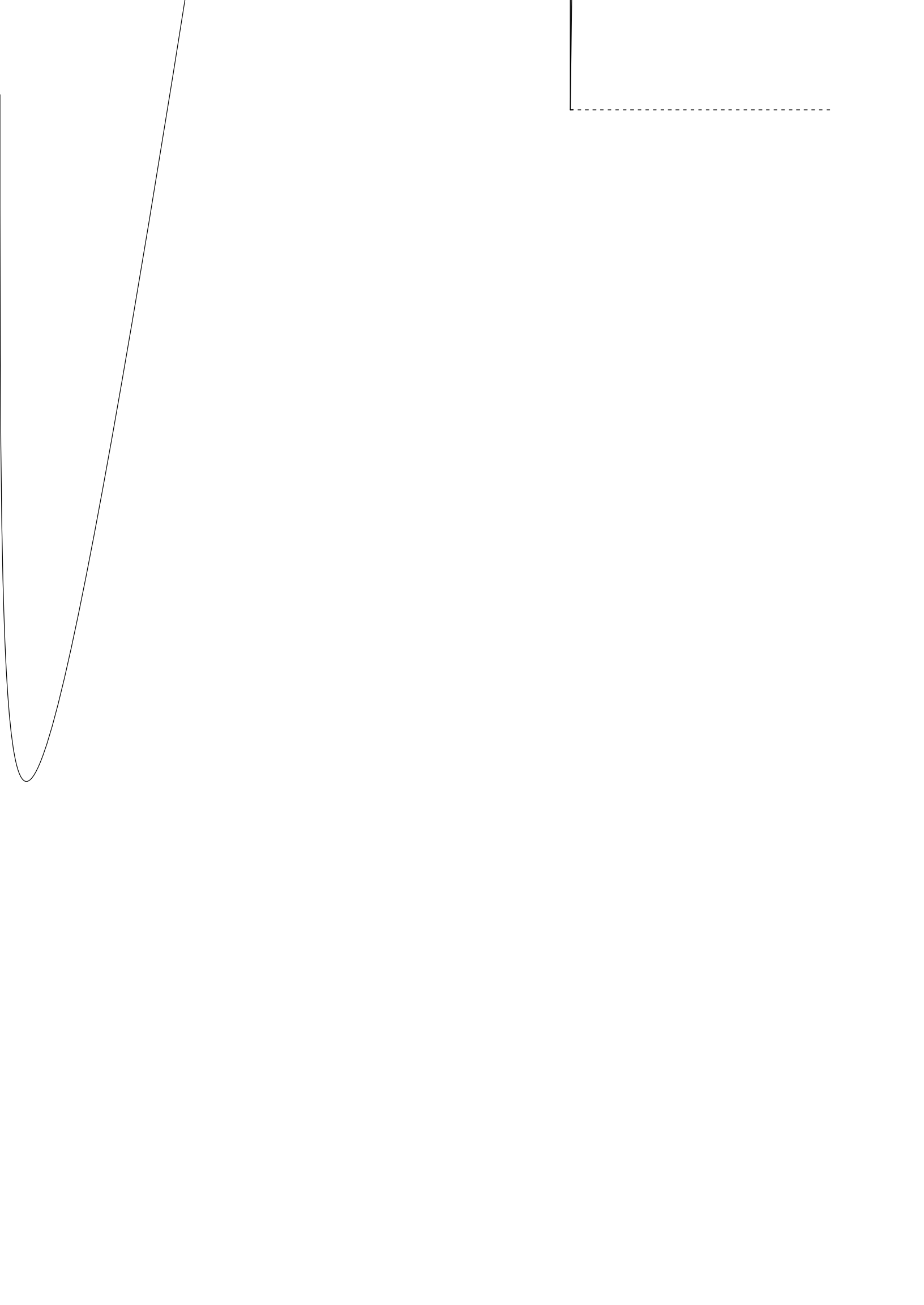
7.3 ; n

7 8 B n10kVy500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
 ^ # Q/CSG 4-3.1.1 Q/CSG 4-3.2.1 Q/CSG 4-4.1.1y4-4.1.10 Q/CSG 4-4.2.1y4-4.2.3 Q/CSG
 4-5.1.1 Q/CSG 4-5.2.1 Q/CSG 4-6.1.1 Q/CSG 4-6.2.1 m X z -

1 > 6 2 o U &

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2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
` o * A B x	C D	)	k 6	
1 A B n o a 5 > p	q 0	! ^	o U X " f > \$ 3 ! > => 6 * 0 = 7 f l D c Q u v 6 N	
2 / X A B < 3 ^ % 6 D 3	q 0	! /	! A B v Y w 8 0 u 0 X * \] w s A B m z ! { A B * 2 o V W h i j k r l * } m [: * 0 5 2 o + d V * @ [: e \ 3 z	
3 A c 0	q 0	! _	! A B n o \$ l 5 > p A ~ r s > 6 * 0 > t g V + X D z	
4 A B 5 a [u [u D b	5 g K	! _	! A B n ` y *   H o U V W * 0 5 > p * g V S 5 o V W   4 { V W * 3   4 u n ` * a 4 F X * b (E 0 z	
5 8 K E ? F G D H	5 K L	! /	! } \$ l \ 3 5 o z	
6 / o U > D 6 D	2	! /	! / a : T / [: * o U V W / o U y * e \ > } * z ! o U V W Y y > } * * D e • V 2 * N e \ 2 z	
7 T x y	x y	! ^	! A B * ! y 2 A) * { 0 * { 0 # [u : 8 [4 < * [u b f z	
8 A B 0 u D H l	5 g K	! ^	! f z T { } T ~ ^ ? { l 7 • L z	
9 / X A B < 3 ^ ' 0 X	5 " K	! ^	! A B V W e \ # 2 > D z	
10	5 " K	! ^	! p M H N g V 6 0 (P Q E @ E o U < 3 ^ R S o U \$ % z	
11 A B 5 E ? y > D 6 D	5 " K	! /	! } h = > j k r 5 o * e \ 2 Y z ! X 0 = 2 o & * 2 - 4 Q > 6 *] 6 D z	
12 A B V W [: ^	5 g K	! ^		
13 [A B 0 u y q 0	V W X Y	! /		



: ; 0 1 2 3 4

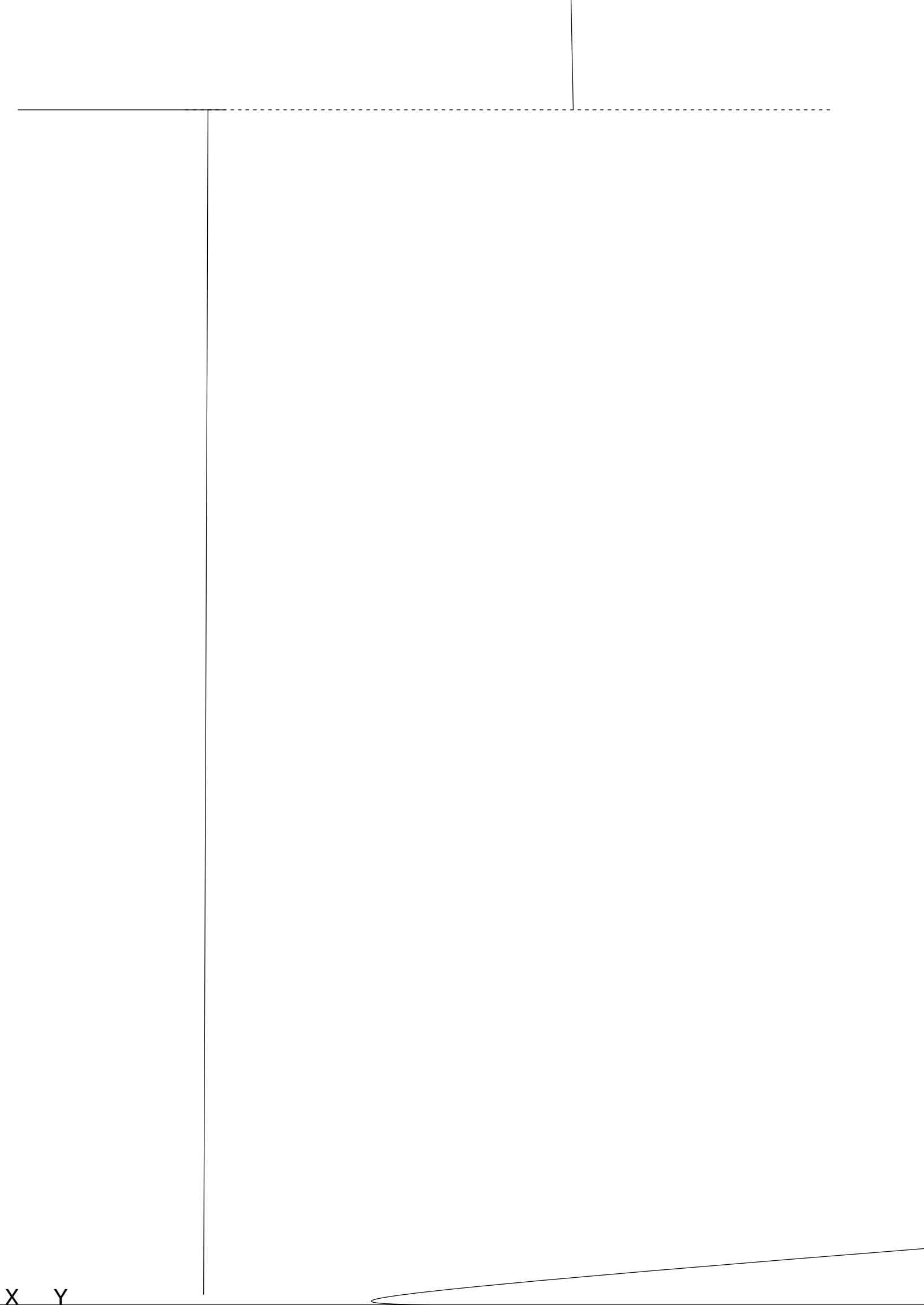
vWNB DYCSY-ZW-1



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4!"#\$%&'





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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & '

1 Z [\]

7 o U p q r Q l m n f z

2 B L ^ _

` 2-1 B L ^ _

4

4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	AB5 a [u [u D b	5 K L	—	AB * \ ` @ [u : 8 [4 < * [u b f
2	ABVW [: ^	5 g K	^	{ AB 2 o V W h i j k r l * } m [: * 0 b 2 o + d V * @ [: e \ 3
3	AB n o a 5 > p	V W X c	^	AB n o \$ l 5 > p A ~ r s > 6 * 0 > t g V + X D
4	[A B 0 u y q 0	V W X Y	/	X 0 = 2 o & * 2 - 4 Q > 6 *] 6 D
5	5 ? { ^ 0	q 0	^	e \ > D
6	AB 0 u D H l	5 K L	^	AB v Y w 8 0 u 0 X * \] w s A B m
7	AB5 E ? y > D 6 D	5 K L	/	E ? y 2 o V W 6 0 (P g V p M E ?
8	g h Z F M *	V W X c	^	AB \] g i j • + V 2 o
9	/ X A B < 3 ^ % 6 D 3	V W X c	/	AB n ` y *   H o U V W * 0 5 > p * g V S 5 o V W   4 { V W * 3   4 u n ` a 4 F X * b (E 0
10	/ o U > D 6 D	V W X c	/	/ a : T / [: * o U V W / o U y * e \ > } *
11	/ X A B < 3 ^ ' 0 X	5 K L	^	} \$ l \ 3 5 o
12		5 K L	^	o U V W y > } * z D e • V 2 * N e \ 2
13	F A B 6 D 3	X 5 " K	^	+ X F H " f 2 o V W * 0 > t V W + X D
14	A c 0	V W X c	—	AB * ! y 2 A) * { 0 * { 0 # [u : 4 < [u

5 0 1 n o

5.1 M N p o

` 5-1 0 1 M N p o

2 x	4 2 o V	+ d V	D V
5 F g i A	3	1	1
; 0 v w 8	3	1	1
0 v w 8	3	1	1
Z \ q X A B	3	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	0 v		c		
2	; 0 v w A v				
3	Z \ q X A B ?		8		
N 2 Y ! v Y v J 2 3 8 \$ J z					

6 0 1 # u

6.1

6.1.1 @ l m n f # , ? s t *] 0 } 0 5 b k E n 7 z

6.1.2 A B 2 o & d n f * V W A B # = > Z 0 > Z 0 d z

6.1.3 , ? 5 g h M * d > ? * g h + z

6.1.4 l m n f 0 = M * > ? ' * A B # z

6.2 | :

6.2.1 - . # 5 o 0 u * X Y A B 0 u I 0 u 0 X 3 l # 8 0 1 * 5 F g i 4 < * s z

6.2.2 - . # 5 o 0 u * X Y A B 0 u I 0 u 0 X 3 l # 1 1 0 1 * 5 F g i 4 < * s z

6.3 \$:

b F w A v n ` w 8 * ~ w 8 H l * v Y p r + < G y * % & w 8 0 v z

6.4 \$

6.4.1 s * 0 v 9 : { H * A B 2 0 v 7 W + X @ z

6.4.2 0 v # [u A # [u 8 [* } K # 8 [: [3 A # / X t y
[(K y z

6.4.3 b F 0 v n ` w 8 * % & 6 0 s y # w 8 z

6.4.4 } % w 8 * { 0 0 [u z

6.5 T : ;

6.5.1 s 2 P q X ? : H { * [u 4 < [u z

6.5.2 A B < 3 ^ |) L v < G / 0 * A m n (/ 0 * | X * f
> 6 0 + X @ * @ / 0 \ l = @ A B % A B z

6.5.3 0 0 % & w 8 ! A B 0 X] X y z

6.5.4 } % w 8 * E n 0 u * A ; { 0 0 [u z

7 m . r ; n

7.1 m .

7.1.1 w 8 l m n f q 0 ; # 0 v * \$ 0 \ D Q 1 0 0 A # \ X z w A ' 2 * D | ; <
h => # \$ l z

7.1.2 Z \ q X A B z

` 7-1 1min / \$ T & kV

l 0 X	3 / 2 0 0 X	l m n f			
		o J b g			
			Z [		Z [
35	40.5	100	100	100	90

7-1t 9 y

l 0 X	3 / 2 o 0 X	l m n f			
				o J b g	
			Z [		Z [
66	69.0	165	165	165	148
110	126.0	265	265	265	240
220	252.0	495	495	495	440

7.1.3 @ 5 F g i : k # 3 _ F o 0 X * | w s k " # \$ l z

7.1.4 5 F g i # A B | w s v p \$ l N F W V 5 F g i # * s [5 o * \ 0 X = X { v p %
y * |] 0 l m n f # [[u n f 4 < u * [A s [z
t1y 0 F g 5 F g i N \ 0 F g [: # 0 X { l 0 X # 801 y 1101 % 0 y z
t2y X a = 5 F g i N \ = X { l = X # 851 y 1101 % 0 y z
t3y t ? k : k A 0 t ? N \ : k [: # 0 X { l 0 X # 801 y 1101 %
0 y z

7.1.5 l m n f + n f # g h 0 = ? | • \ 4 < z

7.2 m`

7-2 m`

	k 7	k a v		
		W	H	S
1	l m n f A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

7.3 ; n

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
^ # Q/CSG 4-12.1.1 Q/CSG 4-14.2.1 m X z



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & '

1 > 6 2 o U &

B 8BDYCSY-Z

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1 Z [\]

7 o U p q r Q O o 0 W 0 P Y z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408



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t2y 0 P w 8 v s J z
t3y w 8 y v | 9 : { z
7.1.2 0 v w A N
t1y A B v Y { l b 1 _ 0 z
t2y 0 v 0 { | > | 9 : { H z
t3y A B 2 0 v + X A ; n ; w A @ z
t4y @ A s t * N | _ G f _ z
t5y A B # q : | D 8 : K : z
t6y \ ` @ w A : A [u : # 8 [* @ 0 v # 9 [: z
t7y % 0 v _ * q d 0 X _ z
7.1.3 Z \ q X A B N
t1y 4 A B v Y { l b 1 _ 0 * s t e z
t2y A B y : = | * ? (D \$ Q 8 5 1 z
t3y A B 0 u H l * q X 0 X e \ z
t4y 4 A B v Y 0 { s L H o z
t5y A B [: e \ n o 4 < * 0 z s L * / X : x (s L * / X : u " 5 b @ V
U m z
t6y F X y |] < A B 0 X y] 6 1 m i n z
t7y A B ' * 2 5) * { 0 z
7.1.4 s [A B N l 0 1 0 X + X @ | s * 4 5 Z s t z
7.1.5 0 P Y R ^ 4 " 0 P # 3 A 3 > * D | ; < 1.08 z
7.1.6 0 v D _ Q 2000 " Ω z
7.1.7 Z \ q X A B < 3 ^ | + m n (/ 0 * { A B \$ l 0 X v A B y 1 m i n H < z
7.1.8 0 o 0 P Y R l 0 1 0 X 4 " 0 \ | : * D ; < 5 1 * 0 P Y | + (o z
7.2 m `

7-1		m	
	k 7	k a v	
		H	W

>) Q / : N 0							
[1 Z 0 V W ,							

.2 0 183.3624 233.76 0.



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X Y

1	%	81
2	;	81
3	o U \ 3	81
4	>	82
5	o U •	83
6	o U a	83
7	7 8 k 6 ! B ~ •	83

" # \$ % & ' "

4 e f g h i j k l m

4.1 p : Z \ q X A B * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6 2 > &
 • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ p : Z \ q X A B " f o # n 0 1 4 5 > 6 2 o U & s t N
 BDYCSY-ZW-12-01/01y* ' s - . / 0 + X (G * * \ l) * => W > 6 2 o
 U & * > W * * 6 2 + d V , ' z

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U
 V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :
 = @ > L o U & * { 2 o (Z Q M] ? @ z 6 2 ' M M Z 2



5.2 /UqrsUs`pt

`5-2 @?/UqrsUs`pt

	x	\$ /		8	
1	V 0v		V	1	
2	qX5		8	1	
N	2Y !vYv	J238\$ J z			

6 01#u

6.1 \$

6.1.1 Enp:#0u*(, En24#, 8:*0 [u{0z

6.1.2 0v { :H* 0v #[u E A #[u "8*{ }b K:
#w8q:# :A K:* 0v #w8 L ! K G "8[twA\ "y*
"A[[uyz

6.1.3 [: *~ 0v Hl *0 0v z

6.1.4 0 0v# *}% 0v 2 A # #w80En [:*: 2 A
+X)*{0z

N\ F 0v y*N F 0v < lr t120r/miny*Sy* 0v p1|p *
:[< A *~p1Hl *0 0v# z0 0v# *NEn[< A # : *
: 0v }%Zr*3 2 A +X)*{0z

6.2 Va T:;

6.2.1 q: FX<XY XY 0X 0\ [: +Xe\8[*: @[:
M5e\+ z

6.2.2 FX | @ XYM5{R zF X<3*| bfv]X<3^*|8 /X
;* A z

6.2.3]<AB0X } . 1min*0 { |0\ 0%&* _AB0X<Rz2PZ\qXA
B *| N XY <R *: EnAB0u* En[< A # q:*w8 AB"
0vz 4 "ABa " z

7 m .r ; n

7.1 m .

7.1.1 0vw8 78•07z S*{?(## v+Xw8y*4{ A N]
0 KzSy{[:(H* A (# K |[]X#/X: m[uM**LM K2
u# N{|*uz" 0v < z

7.1.2 {|0\<GQ 78•07*AB<3^* a=? ('(N x * Q A
N a={0*{|0\DHl*| IJ _ •L +XABz\{| y| _ IJ
#0Er A N#x * y4N T \#r G8K N#B z

7.1.3 \ A bg *AB | q * ' b' *6\ Db*|!y•L*
: ABz

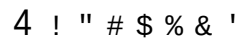
7.2 ; n

78 B n10kVy500kV 9<0!J02378B \$l~• L4KN<00=AB23s
^# m Xz

1 > 6 2 o U &

NBDYCSY-ZW-12-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	A c 0	q 0	! _	o U X " f > \$ 3 ! > => 6 * 0 = 7 f l D c Q u v 6 N ! A B * \ ` @ [ u : 8 [ 4 < * [ u b f z ! [ A B   v Y w 8 0 u 0 X * \ ] w s A B m z ! { A B 2 o V W h i j k r l * } m [ : * 0 5 2 o + d V * @ [ : e \ 3 z ! A B n o \$ l 5 > p A ~ r s > 6 * 0 > t g V + X D z ! A B n ` y * H o U V W * 0 5 > p * g V S 5 o V W 4 { V W * 3 4 u n ` * a 4 F X * b (   E 0 z ! / a : T / [ : * o U V W / o U y * e \ > } * z ! ] > [ u : z ! A B *   ! y 2 A ) * { 0 * { 0 # [ u : 4 < [ u z ! A B V W e \ # 2 > D z ! X 0 = 2 o & * 2 - 4 Q > 6 * ] 6 D z ! A B ' \ ` @ * \ \ ([: d) * * + y [u : d (, * + - . 2 A / e
2	/ X A B < 3 ^ % 6 D 3	q 0	! /	
3	A B n o a 5 > p	q 0	! ^	
4	/ o U > D 6 D	2	! /	
5	A B 5 a [u [u D b	5 g K	! _	
6		5 " K	! ^	
7	A B 5 E ? y > D 6 D	5 " K	! /	
8	/ X A B < 3 ^ ' 0 X	5 " K	! ^	
9	[A B 0 u y q 0	V W X Y	! /	
10	5 ? { ^ 0	q 0	! ^	



j k Nt , y 7 & 5 = > W * > W * * + d V , ' 1 z + d V n 2 * 2 k 6
0 2 0 zt t y 2 o 0 P u 7 > 6 D < y 7 & 3 x 4 4 : * 5 6 | = @ > & * (Z @ \ V W ' <
7 y * | { p % < & 7 / 0 z 2 @ V W + X Z 0 * 0 , \ \ zt y | # % A *) >) >



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1 Z [\]

7 o U p q r Q r s o P Y z

- 1 GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
- 2 DL 408 1991 n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys

3 0 1 a b

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 : = @ > L o U & * { 2 o (Z Q M] ? @ z

4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	A B 5 a [u [u D b	5 K L	—	A B * \ ` @ [u : 8 [4 < * [u b f
2	A B n o a 5 > p	V W X c	^	A B n o \$ l 5 > p A ~ r s > 6 * 0 > t g V + X D

6 0 1 # u

6.1 \$:

0 v w A R S w 8 r s 0 P Y 0 v r s 0 P Y _ X 2 u 0 v z

` 6-1 / 0 < = 0 r /

	2 o 0 P	5 o ! 2 M
1	0 { 0 v 0 v @	s * 0 v 9 : { H * A B 2 0 v 7 W + X @
2	8 [w A : A [u :	0 v # [u A # u : 8 [* } K # 8 [: [3 A w 8 M t y [(K y
3	s # w 8 0 X	0 v # w A 0 v 2500V J 2 u 0 v w A 0 v 1000V J
4	n ` w 8 * 0 0 % & w 8 ' 2	b F 0 v n ` w 8 0 v * 0 60s # w 8
5	} % w 8 * A A ; { 0 0 [u	} % w 8 * A A ; { 0 0 [u

6.2 tand r \$ = :

` 6-2 tand r \$ = :

	2 o 0 P	5 o ! 2 M
1	0 { K v v Y [u	s K v : H { * v Y [u 4 < [u
2	" # A B a 0 A B [: :	} A B [: r H v Y j k r * A B g 8 [: A B
3	n ` w 8 * 0 0 % & w 8 ' 2	b F K v + X w 8 * 0 0 % & w 8 ! A B 0 X
4	} % w 8 * E n K v 0 u * A A ; { 0 0 [u	} % w 8 * E n K v 0 u * A A ; { 0 0 [u

7 m . r ; n

7.1 m .

7.1.1 0 v w A z

t1y e \ 0 { 0 v @ 0 v s t * 0 v 0 { | > * 0 { | 9 : H o *
A B 2 0 v + X A ; n ; w A @ z
t2y 8 [| n o 4 < % w A : D b 0 v # 9 D q [^ * A B # q : |
D 8 : K : * \ ` @ w A : A [u : # 8 [* @ 0 v # 9 [: z
t3y] 6 \ 9 0 X H l H 0 y e \ * H 0 v _ * q d 0 X _ * H v
p r w 8 y | e \ z
t4y \] A d \$ 0 { 0 * %) 0 0 { 0 K L 0 v " V W X B * H v r d
{ 0 ' * u A A ; [u z

7.1.2 tand ! 0 P 8 w A z

t1y H . / X : # u ! A 5 8 [# (6 @ m z v Y { | > : H *]
0 . / X : # u ! A 5 8 [# (6 @ m z
t2y e \ + X A B [: * H / X w A : _ A 5 [u M U m < / R w A ' 2 z
e [* / X : x (s * 0 z s L *] 6 e J b @ V # U m z



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

t3y H e \ [: a * e \ # A B 0 X z e [* e [10kV A B 0 X z
t4y z X X D v (X) v X j 4 7 0 F 1 7 2 0 . 5 6 0 T o + 1 1 0 . 5 6 T f 1 0 . 5 6 0

>) Q/: N 0							
[1 Z 0 V W ,							
>W/F1 9.15+3 Tf18.24 re8080 #\$/F1 9.15+2 Tf18.24 080 6D/F1 9.15							



X Y

1	%	93
2	;	93
3	o U \ 3	93
4	>	93
5	o U •	94
6	o U a	95
7	7 8 k 6 ! B ~ •	96

1 Z [\]
7 o U p q r Q _ V < X Y z
2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408 1991 n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys

3 0 1 a b

开始

V W + d > 6 2 - 3 4 o U e " A - ^ z
4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o O P u 7 D < y 4 8 9
= @ > L o U & * { 2 o (Z Q M] ? @ z
4-1 o U e " > & • p `

_____ A B x

C D)

10 : * :
k 6 1 6

5.2 / U q r s U s ` p t sUs`



6.4.7 A B y * 3kV/s # F X (: H # X V T f 10 A 0 B 4 T 5 (X) T j 0 T j . 10 5 6 A B (X) V T f 10 A 0 B 4 T 5 + 5 10.56 T f 10.56 0 T D (o) T



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113

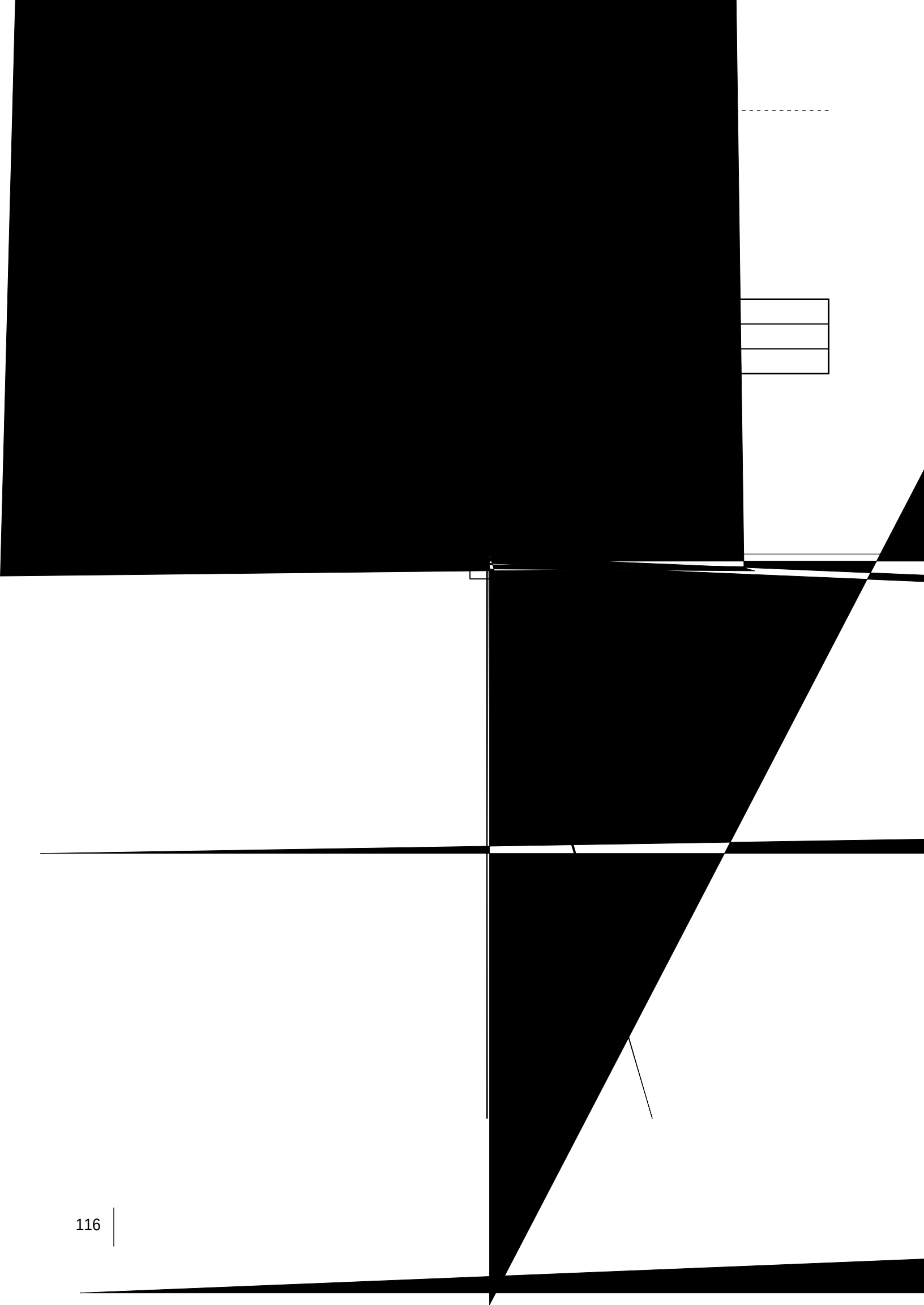


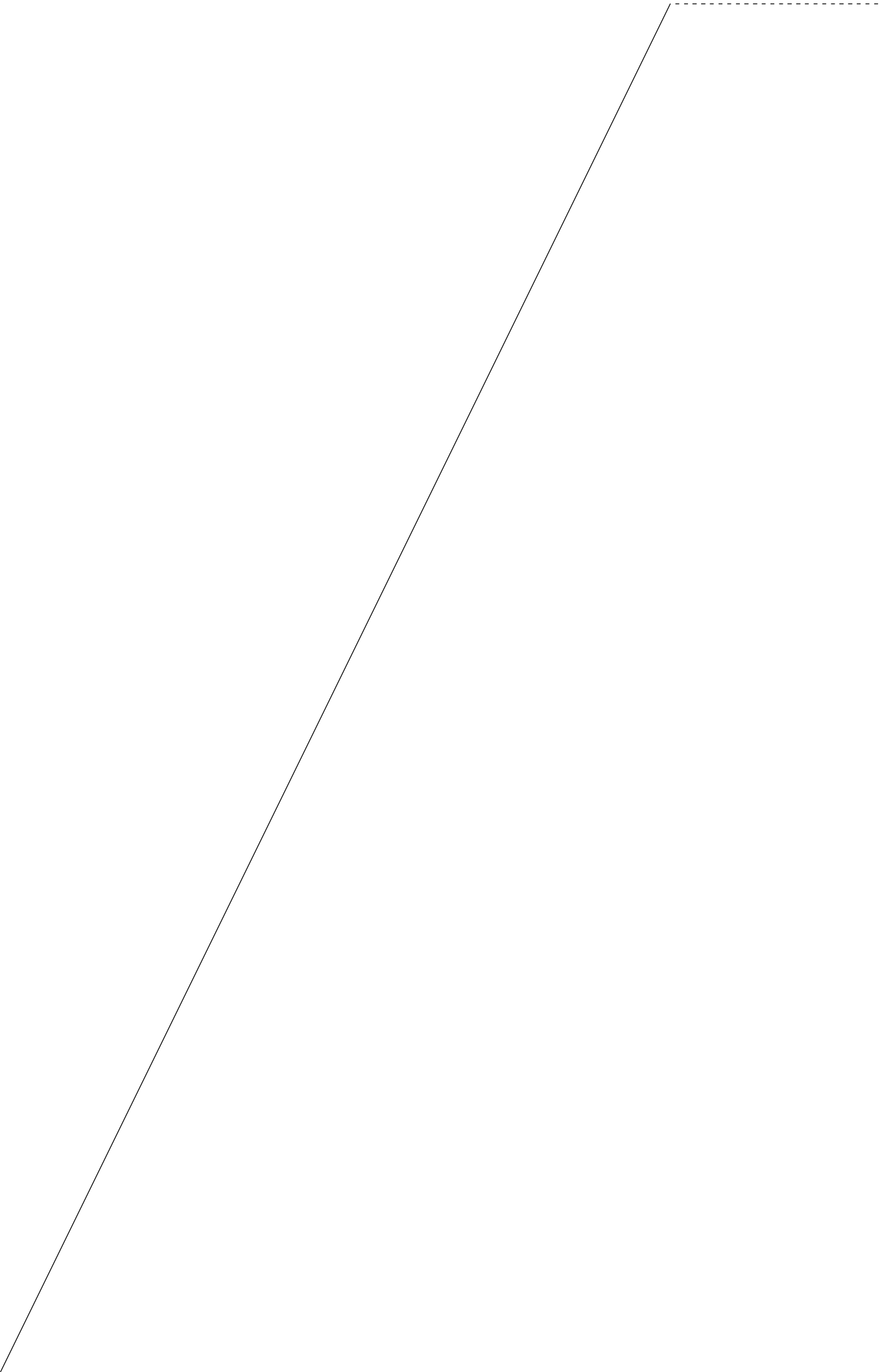


X Y

1

1 %

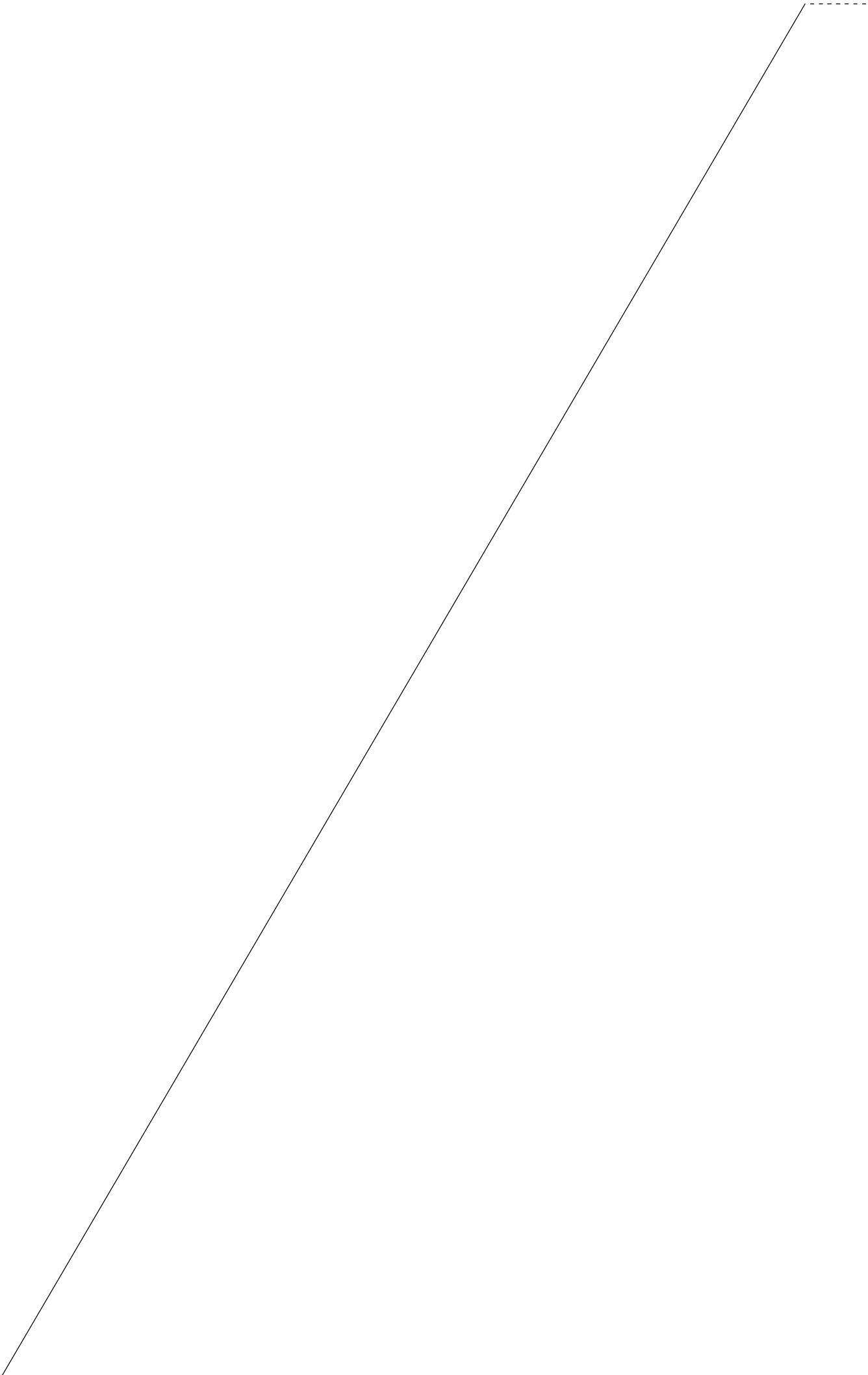






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1 > 6 2 o U &

NBDYCSY-ZW-15-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	A c 0	q 0	! _	5/F5+12.12 Tf 27.16 0.06 0.48 ref 70.5Tj /F5+4 9.12 R D ref (5+4 9.12 V 440 TD (!) Tj/F5 9.12 T ([u) Tj/W70.56 203.0XY29.52 0 D D D/ qr
2	/ X A B < 3 ^ ' 0 X	5 " K	! ^	
3	5 ? { ^ 0	q 0	! ^	
4	A B 0 u D H l	5 g K	! ^	
5	A B n o a 5 > p	q 0	! ^	
6	A B V W [: ^	5 g K	! ^	
7	g h Z F M *	X 2	! ^	
8	F A B 6 D 3	5 " K X	! ^	
9	\$ t { SF ₆ = J	^ \	! _	
10	SF ₆ = J {	= x y	! 4 [1 #	
11	/ X A B < 3 ^ % 6 D 3	q 0	! /	
12	/ o U > D 6 D	2	! /	
13	A B 5 a [u [u D b	5 g K	! _	
14		5 " K	! ^	

15 A B 5 E ? y
> D 6 5 " K ! /
D

>) Q/: N 0

[1 Z 0 V W ,



L 4 M * 0 = A B

\$ = Q \$ T

U : ; 0 1 2 3 4

N BDYCSY-ZW-16

X Y

1	%	107
2	;	107
3	o U \ 3	107
4	>	108
5	o U •	109
6	o U a	109
7	7 8 k 6 ! B ~ •	110

1 Z [\]

7 o U p q r Q 0 P V 0 X] ^ Y z

2 B L ^ _

` 2-1 B L ^ _

	x
--	---

1 GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 > ?

4 e f g h i j k l m

4.1 0 P V 0 X] ^ Y Z [A B * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6

2 > & • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ 0 P V 0 X] ^ Y Z [A B " f o # n 0 1 4 5 > 6 2 o U & s t N

BDYCSY-ZW-16-01/01y* ' s - . / 0 + X (G * * \ l) * => W > 6 2 o

U & * > W * * 6 2 + d V , ' z

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U

V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :

= @ > L o U & * { 2 o (Z Q M] ? @ z

4-1 o U e " > & • p `

A B x C D) t

< w A	2	1	1
K w A	3	1	1
t ? ~ R q X	3	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	V 0 v		c	1	
2	p 1 V		c	1	
3	" X Y			1	
4	Z \ B >		c	1	
5	< w A v			1	
6	A B T V			1	
7	K w A v			1	
N 2 Y ! v Y v J 2 3 8 \$ J z					

6 0 1 # u

6.1 0 1

6.1.1 0 X] ^ Y d > ? ' * o l n o * 4) @ + (* ~ I W e \ z
6.1.2 t ? [: A 5 [u * / X : a 8 [d f n * + 5 f [u % ^ | q 0 z
6.1.3 6 @ A B + X * A B D b V # Z \ 4 d 0 t _ z
6.1.4 b # w 8 v ! B s * 0 { l \$ _ 0 z

6.2 : ; # u

6.2.1 w 8 0 X] ^ Y , t ? ~ R # 0 v N 2500V 0 v w 8 0 v 2500V
0 v w 8 t ? ~ R > ! 2 u # 0 v z
6.2.2 0 X] ^ Y t ^ 0 X d y # 3 @ N A B : H 0 I A 0 X] ^ Y ^ < X Y #
, ? ~ R 8 [* p 1 t J { { 3 0 # . 5 6 1 1 0 . 5 6 T f 4 2 0 T D (^) 1 1 0 T



7.1.1 w 8 4] ^ Y ~ R # 0 v * | w s v p \$ l N] ^ Y # 0 v * w 8 , ? ~ R 2 t ?
 ~ R ! 4 5 4 t ? ~ R ! 2 4 5 # 0 v 0 v D \$ _ Q 1000MΩ 0 v w 8 |
 2500V 0 v z

7.1.2 @] ^ Y # " [: R A "] ^ Y : # z w s v k s NR @

~ A k v s 8 ,



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>) Q/: N 0							
[1 Z 0 V W ,							

j k Nt , y 7 & 5 =>W * > W ** +dV , ' 1 z +dVn2 * 2 k 6 0 2
0 zt t y 2 o 0 P u 7 > 6 D<y7&3x4 4 : * 5 6 |=@>&* (Z @ \ VW ' <7 y *
| { p %&<7 / 0 z 2 @ VW+XZ 0 * 0 , \ \ zt y | # % A *)> Q :
N 0 zt 8 y \) & •) D , d y * Q M | R S " f V W = @ + X \$ % 0 k l 6 zt 9 y & •
) k 6 { n 2 : ; zt < y , D = t N > , # y ! o } & • L z



\$ Q \$ T U : ; 0 1 2 3 4 vwNB

X Y

1	%	113
2	;	113
3	o U \ 3	113
4	>	114
5	o U •	115
6	o U a	115
7	7 8 k 6 ! B ~ •	116



! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

1 Z [\]

7 o U p q r Q 0 t V 0 X] ^ Y z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 50150 2006n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
2	DL 408 1991n 0 U > 2 o \$ 3 t ' 0 A < 0 0 = M * ys <



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & '

4 e f g h i j k l m

4.1 0 t v 0 x] ^ y z [A B * 6 2 Q M ! Q o

@ t S 3 w A	2	1	1
K w A	3	1	1
t ? ~ R q X	3	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	0 v		c	1	
2	p 1 V		c	1	
3	" X Y			1	
4	Z \ B >		c	1	
5	< w A v			1	
6	A B T V			1	
7	K w A v			1	
N 2 Y ! v Y v J 2 3 8 \$ J z					

6 0 1 # u

6.1 0 1

6.1.1 0 X] ^ Y d > ? ' * o l n o * 4) @ + (* ~ I W e \ z

6.1.2 t ? [: A 5 [u * / X : a 8 [d f n * + 5 f [u % ^ | q 0 z

6.1.3 6 @ A B + X * A B D b V # Z \ 4 d 0 t _ z

6.1.4 b # w 8 v ! O \$ 0 1 2 3 4 5 6 7 8 9 A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [\] ^ _ ` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~

AB0X*+X K A0P wAz

6.2.7]^Yt?~RZ\qXABz ABTVR FX ;*6]t? ;+X2uZ\qXA
B*AB0X 2500V AB y 1min*+{0 o H<z

7 m .r ; n

7.1 m .

7.1.1 w84]^Y~R# 0v *|wsvp\$[N]^Y# 0v *w8,?~R2t?
~R!45 4t?~R ! 245# 0v 0vD\$_Q 1000MΩ 0vw8|
2500V 0v z

7.1.2 @]^Y# "[:R A "]"^Y :# 3* ws53 m*0| *s(#~
%A45(#w "wz

7.1.3 0X]^Y~R# \0vw8z,?~R \0vw8 *)3 , '(v# *
" D\$ Q101 t?~R \0vw8 *)3 , '(v# * " D\$ Q151z

7.1.4 < @z w #< | *s(# "w*2 #]^Y*4c @ * [#< z

7.1.5 0tV0X]^Y#@tQ:w8*|wsvp mN

t1y Q@tQ:w8#v a! * ' w8'2 AB A VAB b
"t 301yy*|*2 #v CDM5e\z

t2y ,U/0v*@tQ:w87 l0X#201 501 801 1001A1201z2Q^37
[[u#0X]^YtN [uy*0X)35kV!uv0X)#0X]^Y3/w8
7 1901 0X)66kV!u(#0X]^Y3/w87 1501z

t3y 2Q l0Xw87t1001y*@t0\D\$ Q AB A VAB #w8
#301* ? \$ 0X]^YS7#@t0\D\$" 301z

7.2 m `

`7-1 m `

	k 7	k a v		
		w	H	S
1	0tV0X]^YAB			

NHN78 k 0.48 N f126 342+(G0.48 re fd/F5+1 9.12 Tf0.0 TD (

1 > 6 2 o U &

NBDYCSY-ZW-17-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	A c 0	q 0	! _	o U X " f > \$ 3 ! > => 6 * 0 = 7 f l D c Q u v 6 N
2	A B 5 a [u [u D b *	5 g K	! _	! A B * \ ` @ [u : 8 [4 < * [u b f z ! [A B v Y w 8 0 u 0 X * \] w s A B m z
3	A B n o a 5 > p	q 0	! ^	! { A B 2 o V W h i j k r l * } m [: * 0 5 2 o + d V * @ [: e \ 3 z
4	/ o U > D 6 D	2	! /	! A B n o \$ l 5 > p A ~ r s > 6 * 0 > t g V + X D z
5	A B 0 u D H l	5 g K	! ^	! A B n ` y *   H o U V W * 0 5 > p * g V S 5 o V W   4 { V W * 3   4 u n ` * a 4 F X * b (E 0 z
6		5 " K	! ^	! } \$ l \ 3 5 o z
7	/ X A B < 3 ^ ' 0 X	5 " K	! ^	! / a : T / [: * o U V W / o U y * e \ > } * z
8	/ X A B < 3 ^ % 6 D 3	q 0	! /	! o U V W Y y > } * * D e • V 2 * N e \ 2 z
9	A B 5 a [u [u D b	5 g K	! _	! } > [u : z ! A B * ! y 2 A) * { 0 * { 0 # [u : 4 < [u z
10	[A B 0 u y q 0	V W X Y	! /	! A B V W e \ # 2 > D z ! p M H N g V 6 0 (P Q E @ E o U < 3 ^ R S o U \$ % z
				! } h = > j k r 5 o * e \ 2 Y z
				! X 0 = 2 o & * 2 - 4 Q > 6 *] 6 D z
				! A B ' \ ` @ * \ \ ([: d) * * + y [u : d (, * + - . 2 A / e
N A B x , p ^ * } b * ~ % # * j k S A B { G H & 4 q ' < z				

>) Q/: N 0

ȳ

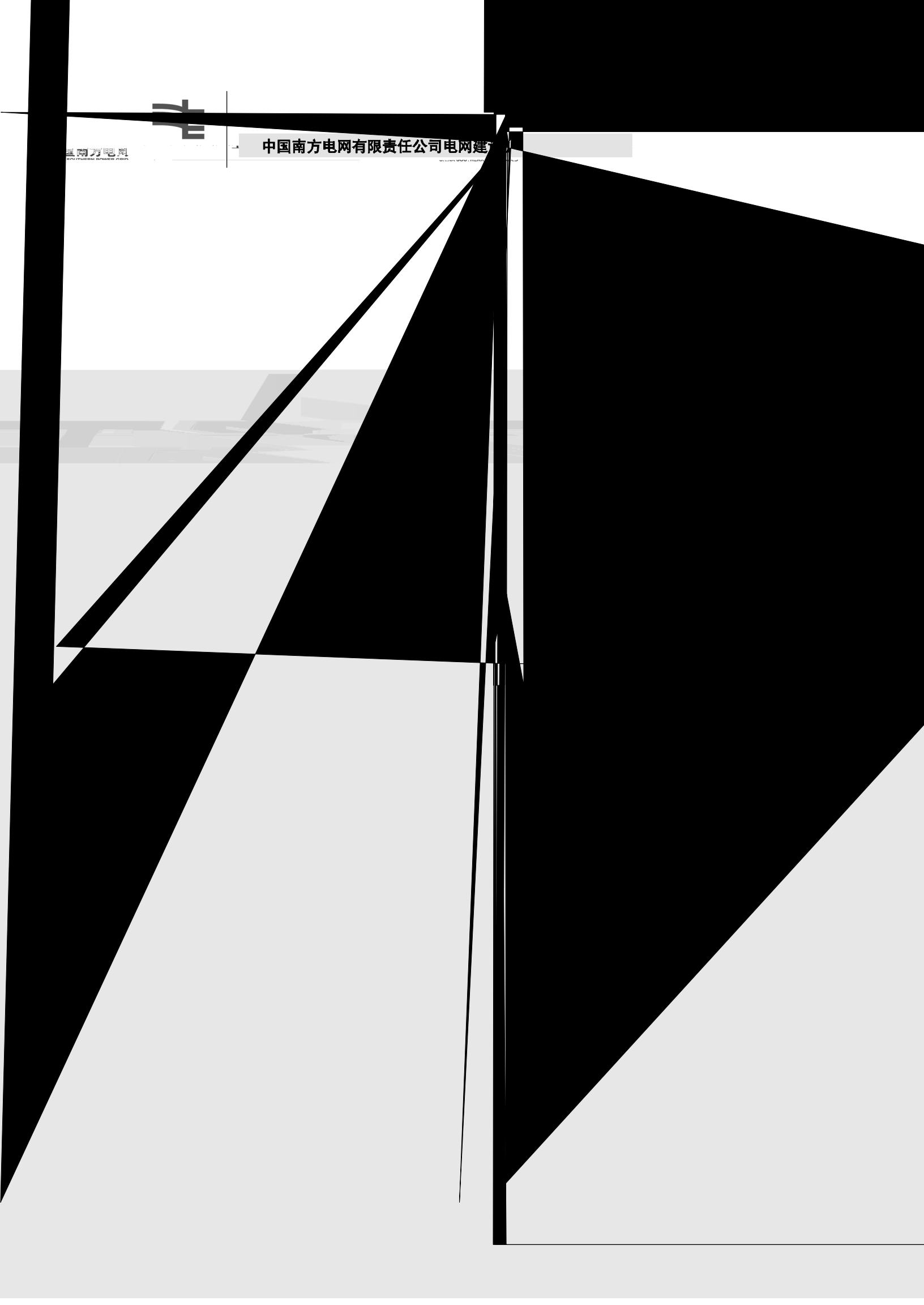
[1 Z 0 V W ,

j k Nt , y 45+1 9775442.02T0800.2131024*51295.4125463240218.4810288E-0245 TD45 @10672e0f85704096q23f8c71199545e1290LDD6



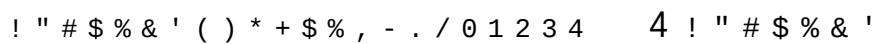
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X Y

1	%	121
2	;	121
3	o U \ 3	121
4	>	121
5	o U •	122
6	o U a	123
7	7 8 k 6 ! B ~ •	125



1	DL/T 475	T T	x
---	----------	-----	---

4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	AB5 a [u [u D b	5 K L	—	AB * \ ` @ [u : 8 [4 < * [u b f
2	ABnoa5 > p	VWXc	^	ABno \$l5 > pA~rs > 6*0>t gV+X D
3	/XAB<3^ % 6D3	VWXc	/	ABn`y* H oUVW*05 > p* gV S 5oVW  4 { VW* 3   4un` a4FX* b (E0
4	0 : >	VWXc	—	1. ABVW0 : < 3 ^ H f X T * f r 6 2. AB : < ; • 7 R 3. : C l 50m 5gV S 4. 0 \ 0X 5gV S05 rs 5. <0 00 : Q FwA :
5	5 ? { ^ 0	VWXc	^	DV] > [u :

5 0 1 n o

5.1 M N p o

` 5-1 0 1 M N p o

2 x	4 2 o V	+ d V	D V
[u 1 0 = I 3 w A	4	1	1
[u 0 v w 8	3	1	1
N o U V J 2 3 8 \$ J z			

5.2 / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t

	x	\$ /		8	
1	l m < X Y			1	
2	Z \ 0 \			1	
3	/ 0 v 0 X			1	

` 5-2 t 9 y

	x	\$ /		8	
4	~ • 0 \] ^ Y			1	
5	a = n f		D	1	
6	0 X w A :			—	
7	0 \ w A :			—	

8	0 X :			—	
9	0 \ :			—	
10	u 1 q H 0 v w A v			1	
11	6 V GPS		c	2	
N 2 Y ! v Y v J 2 3 8 \$ J z					

6 0 1 # u

6.1 W % \$ 9 :

6.1.1 :

 t1y # N [u 1 d 5 3 m k o z
 t2y : = # N : z

6.1.2 : # u

{ , D 0 X) # n u C D l j [u v : | + 7 * u 1 q H 0 v w A v w A u v \ 0
v N

 t1y 7 l 0 = 5 [u M * | + 7 > z
 t2y " l j [u v : > z
 t3y j p : 5 [u v : > z
 t4y D 0 X) # n u , < X Y [u v : | + 7 * w A < X Y | + 7 0 X) < X

W

7 m . r ; n

7.1 m .

7.1.1 m 3 # w 8 0 \ * , U m 0 \ # [u 0 v D Q 10Ω * V 4 u y # [u ?
0 \ z

7.1.2 w 8 * | f g : < 0 # [u ? # 8 [E n z

7.1.3 m L _ # R * w 8 : | W 8 4 q m Z X ^ # 9 0 : ; > z

7.1.4 w 8 0 # 0 f n \ 9 u v K z

7.1.5 [u v h w 8 ' 2 w s 5 3 m z

7.1.6 [u 1 0 = I 3 w A | w s GB 50150 2006 ^ 26.0.2 Q \ 0 v * D | Q 0.2Ω z

7.2 m `

` 7-1 m `

	k 7	k a v		
		W	H	S
1	[u 0 v w 8			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

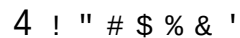
7.3 ; n

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
^ # Q/CSG 4-20.1.1 Q/CSG 4-20.2.1 m X z

1 > 6 2 o U &

B 8BDYCSY-ZW-18-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	5 ? { ^ 0	q 0	! ^	o U X " f > \$ 3 ! > = > 6 * 0 = 7 f l D c Q u v 6 N !] > [u : z ! A B * \ ` @ [ u : 8 [ 4 < * [ u b f z ! A B n ` y * H o U V W * 0 5 > p * g V S 5 o V W 4 { V W * 3 4 u n ` * a 4 F X * b (   E 0 z ! A B n o \$ l 5 > p A ~ r s > 6 * 0 > t g V + X D z ! A B *   \ ` @ [u : 8 [4 < * [u b f z ! A B V W 0 : < 3 ^ H f X T * f r 6 z ! A B : < ; • 7 R z ! : C l 5 0 m 5 g V S z ! 0 \ 0 X 5 g V S 0 5 r s z ! < 0 0 0 : Q F w A :
2	A B 5 a [u [u D b	5 g K	! _	
3	/ X A B < 3 ^ % 6 D 3	q 0	! /	
4	A B n o a 5 > p			
5	A B 5 a [u [u D b	5 g K	! _	
6	A B 0 :	V W X c	! _	
7	[A B 0 u y q 0			



j k Nt , y 7 & 5	=> W * > W * *	+ d V , ' 1 z + d V n 2 * 2	k 6
0 2 0 zt t _y 2 o 0 P u _y * >	6 D < y 7 & 3 x 4	4 : * 5 6 = @ > & * (Z @ \ V W ' <	
7 y * { p % & < 7 / 0 z 2 @	V W + X Z 0 * 0 , \ \ zt y	# % A *) >	
y \			



! " # \$ % & ' () * + \$ % ,

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X Y

1	%	3
2	;	3
3	o U \ 3	3
4	>	4
5	o U •	5
6	o U a	5
7	7 8 k 6 ! B ~ •	7

1 Z [\]

Z [A B M q ! y b 1 u ' 0 W 5 Z 9 > ? a N # " # ` a % 0 W 5
] 0 0 W q > Z X # b 1 * M] 0 0 W 5 > h 2 o ^ D 4 M # , D = w z m 6
G , ? 5 Z [A B 2 o * \$ % Z [A B o U * ` a 0 1 G H R S k 6 2 o U p q r z o U p q
r # | } _ h ~ • X U ~ • U ~ • ` a 0 1 ~ • ! " f # = > \$ % \$ l z
7 o U p q r Q 110y500kV 0 X) @ > ? # } _ h " f A B ~ • A B s # GIS
5 # Z [A B * 7 o U p q r D Q > ? { v b A # 0 = 5 z 7 o U p
q r 2 GIS Z \ q X Z [A B # 5 o - = > 7 > H Q > O P + X m
\$ % * Q p q 110y500kV GIS # Z \ q X Z [A B 2 o z

2 B L ^ _

` 2-1 B L ^ _

	x
1	GB 7674 1987 72.5kV ! u (= J b c 9 n f 5
2	GB 50510 2006 0 = ? > ? 2 3 0 = 5 Z [A B ~ •
3	DL/T 618 1997 = J b c 9 n f 5 Z [A B \$ 3

u ! " f ~ • z
u (~ • b @ 7 * 3 @ 7 X z

3 0 1 a b

o U t 2 y \ 3 • 3-1z

4 e f g h i j k l m

4.1 GIS q X A B 6 2 * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6 2 > &
• p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ GIS q X A B 6 2 " f o # n 0 1 4 5 > 6 2 o U & s t N
TSSY-ZW-01-01/01y* ' s - . / 0 + X (G * * \ l) * => W > 6 2 o U
& * > W * * 6 2 + d V , ' z

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U
V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :
= @ > L o U & * { 2 o (Z Q M] ? @ z

4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	A B 5 E ? y F G D H	5 " K	—	5 Q E @ F } * \ \ F G n o
2	A B 5 E ? y D V > D 6 D	X	—	e \ > * 5 Q E < 3 ^ { 5 E ` # e v a z 5 0 F y D < * ~ H l 2 o
3	A B 5 E ? y } 0 5 > U m D V	M * } 0	—	2 o V W h i * } 0 5] 6 @ V # > U m z E T 5 6 0 V W 5 o * E ? < 3 ^ b g V p M D
4	" } 0 l	q 0	—	A B 2 o * 2 o + d V . R V W Z ~ I W 2 o u 7 2 o 0 P > 6 } 0 M A > H Q
5	/ o U > D 6 D	2	—	2 o * 2 o V W k \ 2 o * 0 \ l > # / ; : z / o U > } * > } { 2 o n o ' - o l e (z @ M 5 f * b V * V H W ~ ^ * 2 V 2 o Q D o z y / a o U T
6	" A B / X n o	q 0	—	A B 2 o * 2 o + d V \ l 2 o % * 5 > p * D b ` # { > p \$ V D * % + f V W + "
7	A B 0 u P 8	M * } 0	—	2 o 6 2 < 0 m f I W + y 6 2 0 u X 0 u P 8 / 0 * D q c 0 u n f # P 8 * \] A B 0 u P 8 6 @ m
8	T A t ? n ;	5 " K	—	A B V 2 T A t ? # + X @ *] 0 T A t ? A ; [u
9	T V t ? A ;	5 " K	—	A B V 2 T V t ? # + X @ * T V t ? n ; * , , 7 [u * / X [u
10	n f A B s t ^	5 " K	—	A B g V ' s l 3 2 n f s t + X \ \ * \ \ + a 4 n ` A B

11 c 0

q 0

—

X | ! y 5 u : * ~) * { 0 a 4
5 o 1 1 # \$ q r —

5 G

5 0 1 n o

5.1 M N p o

` 5-1 M N p o `

2 x	4 2 o V	+ d V	D V
A B # •	5y6	1	1
Z \ q X w A	5y6	1	1
2 o '	5y6	1	1
N o U V J 2 3 8 \$ J z			

5.2 @ ? / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t `

6.1.2 , q X A B 4 * GIS | d 4 Q A B Q z

6.1.3 A B y * GIS] X % 0 # b 0 \] ^ Y # t ? ~ R | A ; 0 [u * 0 t V 0 X] ^ Y # t ?
~ R | n ; 0 7 [u z

6.1.4 GIS q X y * u v 5 | l m 6 * f z 6] A B 0 X N

t1y / X 0 A a : z

t2y 0 W < X Y A 0 o 0 h Y z

t3y 0 t V 0 X] ^ Y t A B ! . / } (0 t V 0 X] ^ Y z < P 0 u y * 0 t V 0
X] ^ Y h \ \ D / Q t " A # * V 4 u A ;

6.2.7 q X 2 GIS) * { 0 w 8 0 v 0 % & * ; ? A B " z
6.2.8 A B ' * (, [: E ? q X A B 5 0 GIS # , t ? [:) * < A B s t z
7 m . r ; n

7.1 m .
7.1.1 A B 0 X] < / / " < X Y # K B z 7 A B # 0 X w 8 ? | < • * 0 b •
* \] w 8 + z
7.1.2 A B y | 8 H * 0] 0 X Y • Q R * 3 R Q F X z
7.1.3 A B y |] 6 2 0 u u ! A B ; # @ A * ' b (y } % A B z
7.1.4 A B ^ + (* 6 C 9 F X < A B 0 X * x 3 q X y + X < R * E 0 u 0 [u : z
7.2 m ` G
7 8 k • 7-1 z

` 7-1 m `

	k 7	k a v		
		W	H	S
1	GIS Z \ q X A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

7.3 ; n
7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s
^ # Q/CSG 4-13.1.7 Q/CSG 4-13.2.5 m X z

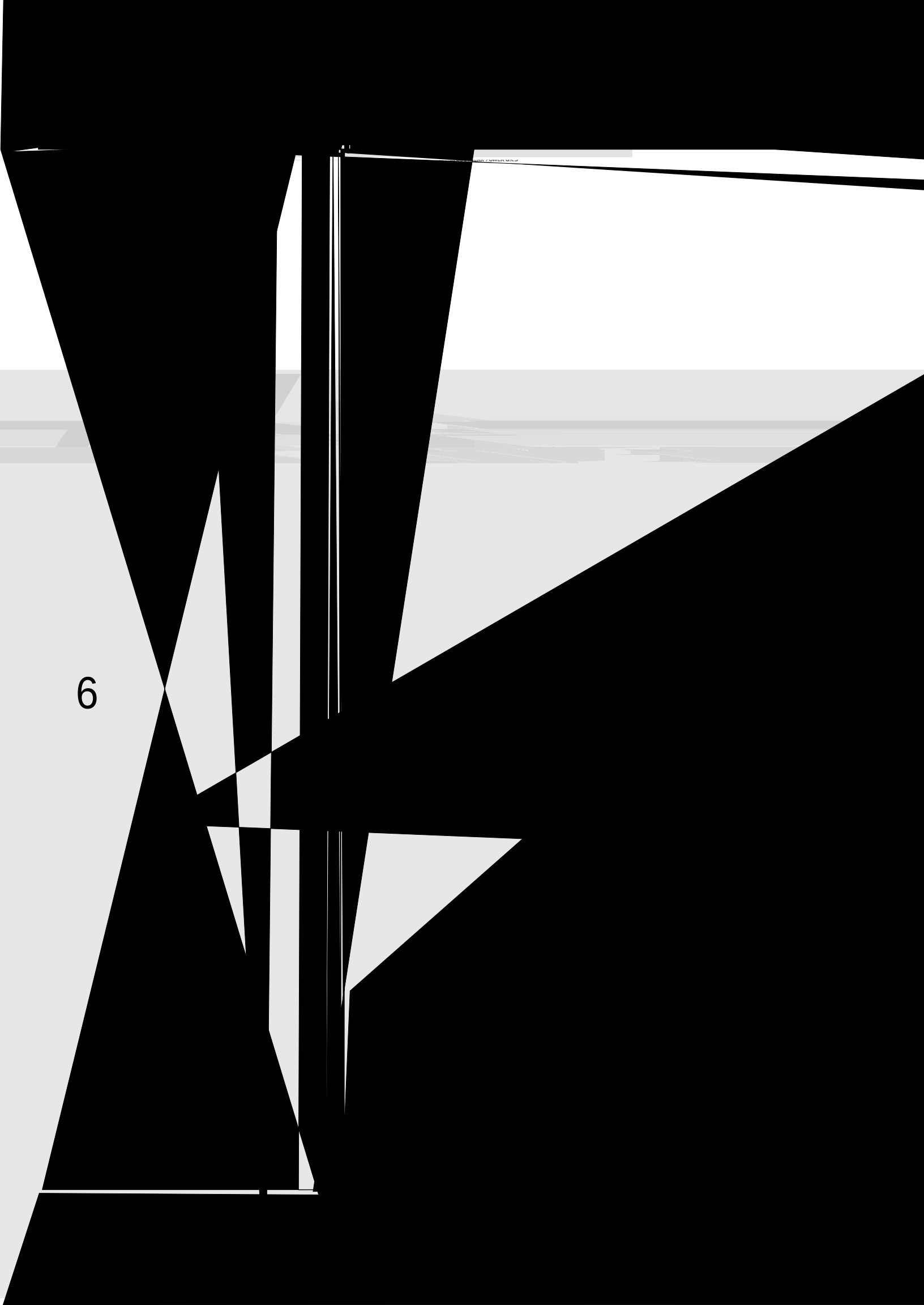


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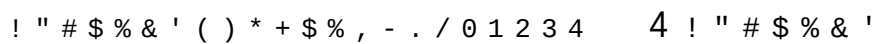
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X Y

1 %



7 o U p q r Q 110y500kV 0 X) * 0 = ? > ? 2 3 0 = 5 SF₆ = J Z [A B o U z

2-1 B L ^ _

X

1 GBJ 148 1990 0 = ? > ? 2 3 0 W

2	~ r s	—	
3	> }	—	
4	P 7 V 0 u :	—	} 0 \ F o] D Y
5	' ? (3	1 c	
6	2	1 8	
7	A B 8 [[	1 D	
8	? (v t 7 v y	1	8 V 7 v # w 8 7 % { ' (2 0 i y 6 @ 0 y - 6 0 i * w 8 D ; < 0 0 . 6 i z v P V ? (3 w 8 7 % 6 @ 0 y - 6 0 i * w 8 D ; < 0 2 i
9	A B K	—	+ D 9 K K A : 8 , ; < * = > D M Q 1 m m * 0 2 y 4 m m * K 0 = ? I J * % @ K A : A ; < K
10	X W A \ 8 k		X W w 8 0 y 1 . 0 M P a A \ 8 k # } =
11	l 3 v	1	[(D M Q 1 0 μ L / L
12	t = K	5 m	B H @ K
13	A B % &		% & 7 P D A
14	7 ? ()		D L / T 5 0 6 & B
15	? (' ()		D L / T 5 0 6 & C
N 2 Y ! v Y v J 2 3 8 \$ J z			

6 0 1 # u

6.1 . / n o

` 6-1 . / n o

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
1	@	2 o + d V { Z X V W } C v + " 2 o * @ > 6 M 5 6 @ 2 o m * 0 > L / 4 9	> 6 M 5 6 @ 2 o m	1 y m f * 2 o V W { (+ X A B 5 o 2 y) L l # Z X / 0 A > U m

` 6-1 t 9 y

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
2	> => 6 Z 0	2 o R W p D * 2 o + d V 2 0 2 o & (# 2 o 0 P A > 6 * 0 Z ~ > 6 ! H Q	1 y 2 o e " A > 6 Z ~ M 5	

4	[A B 0 u	w s > m # 0 u : * 0 u : T A B u 7 P < X 0 u j * [0 u	1 y % [_ X 0 u 2 y @ 0 u 0 X M 5 < /	1 y @ 0 u M 5 [X 0 u * % Z 2 X 5 2 y { [A B 0 u w 8 0 u 0 X M 5 w s A B m 3 y % [" \ 0 u
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6.2 . / 0

6.2.1 : ;

` 6-2 : ;

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
1	A B [8 [	@ 5 [* 2 [+ X I L * \ l b I J 8 ' e t t 2 b I J 8 ' e ? { * t e b u q + X w A * 5 6 { K ! ? A B y	% [D L J * q d =	1 y e \ [* m 8 9 b f z D 9 M k " z % C [z 2 y y 500W u (# 0 N _ [M
2	8 [A B K	s # A B 8 [K z 8 [3 5 (# = J [(	w s \$ % m # K	1 y A B K 4 + D 9 K K A : 8 , ; < K = > D M Q 1mm * 0 2 y 4mm * K 0 = ? I J * % @ K A : A ; < K A C K 2 y K 8 [0 P Q : 8 , ; < Q 3 y [" 5m # v Y t = K
3	b F v Y	8 [K v Y + = # 8 [* : n v Y 0 u z v Y + " • w 8 s t	v Y @ e	1 y 0 u w s v Y m 2 y R 7 v @ R M 5 _ G
4	? (w 8	1 y : n 5 (# } = 2 y % & X W 3 (# X W 3 y n b = ; } = w = J \ 8 w s w 8 m 4 y % & w 8 0 5 y % & w 8 ' y # X W	] 0 ? (w 8 # • \	1 y [A K b = / 0 * % A B * ! y • L { M 2 y \] v Y # ^ Y M { = X W v + X w 8 3 y w 8 S Q H l * 4 % & 4 y w 8 ^ 8 H 5 # X W < G * X W v H F F P

X W X H W P A L ? (

6	• L	1y 7 ? (#) 2y ' (? (# X e	} \$ % # m + X)	1y DL/T 506 & B = X W # 7 ? () 7) 3 ? (2y DL/T 506 & C ? (' () w 8 X e 3 20 i y #
---	-----	----------------------------------	---------------------	---

6.2.2 : ;

` 6-3 : ;

b 9.12 Tf 1.18 0 FD D	(y) Tj /F9 9.52 0.12 0 TD (D (y) Tj /F1 9.12 1.25 6.12 0 TD	Y2(2) T1 546j/F%& 9.62 Tf .12 0		
1	R G	[V W R G w # } = M	R G 8	1y R G * 5 N I L _ G 2y R G # J B D \$ * J B 4 * R G 3y V W] 0 + " * D P / ?
2	b F v Y	8 [0 u * : n v Y n f	v Y w e	1y 0 u w s v Y m 2y @ v Y [u : b f 3y w A v Y 2 SF ₆ = J b R 1y

3 1 8 | C D R G M { | 8 D Q v Y w 8 • \

30 10⁻⁶t J B y

7 m . r ; n

7.1 m .

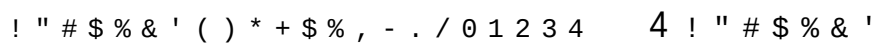
` 7-1 m .

1 > 6 2 o U &

N TSSY-ZW-02-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	} 0 5 # > U m D V	q 0	! _	

20.24 Tϑ(q5 9.12 Tf62042 5.76 TD -q) Tj/F5+1 9.12 Tf9.12 0 TD -0.24 Tc /MU
i



j k Nt , y 7 & 5 =>W * > W ** + d V , ' 1 z + d V n 2 * 2 k 6
0 2 0 zt t y 2 o 0 P u 7 > 6 D < y 7 & 3 x 4 4 : * 5 6 | = @ > & * (Z @ \ V W ' <
7 y * | { p % & < 7 / 0 z 2 @ V W + X Z 0 * 0 , \ \ zt y | # % A *) >
Q : N 0 ± 8 y \) & •) D , d y * Q M | R S " f V W = @ + X \$ % 0 k l 6 ± 9 y
& •) k 6 { n 2 : ; zt < y , D = t N > , # y ! o } & • L z



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X Y

1	%	21
2	;	21
3	o U \ 3	21
4	>	22
5	o U •	22
6	o U a	23
7	7 8 k 6 ! B ~ •	24



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4 e f g h i j k l m

4.1 0W<XYZ\qXAB62 *62Q M !Q oUe" 62# *|}n0145
62> &• p`stvwxnp`syn(123> \$%2o*• !e"# * z
4.2 np`s^ 0W<XYZ\qXAB62"fo#n0145> 62oU&st N
TSSY-ZW-03-01/01y*'s -./0+X (G* *\l) * =>W > 62oU
&*> W **62+dV, 'z
4.3 62+dV*2 k 6*0{ - ./(2 JoUVW+X> Z0*[1Z0#oU
VW+d > 62-34oUe"A- ^z
4.4 > 62oU&562+dV 6b*2o0P u7D<y489 10:*;<10:
=@>LoU&*{2o (ZQ M]? @z

4-1 oUe"> &• p`

	A B x	C D	)	k 6
1	" } 0 l	q 0	—	AB2o *2o+dV .RVWZ~I W2ou7 2o0P > 6 } 0M A> H Q
2	/oU> D 6 D	2	—	2o *2oVW k\2o *0\l> # /;:z /oU > }* > {2o no '-ole(z @ M5 f* bV * V HW ~^*2 V2o Q Do
3	" /XABno	q 0	—	AB2o *2o+dV \l2o% * 5 > p*D b`# {> p\$ V D* %+fVW+"
4	AB0uP8	M*}0	—	2o 62 <0 mfiW+y 620u X0uP8/0*Dqc 0un f#P8*\]AB0uP86@m
5	w8vYa •*AB 0X</	5 "K	—	#0Xw8? < •*0b • *\]w8+
6	c 0	q 0	—	X !y 5u:*~)*{0 a45o
7	- .2	5 KL	—	2oVW{AB' +X\` @*\` +- .2 A/e

5 01no

5.1 MNpo

`5-1 M N p o `

2 x	4 2oV	+dV	DV
AB #•	5y6	1	1
Z\qXwA	5y6	1	1
2o '	5y6	1	1

5.2 @?/UqrsUs`pt

`5-2 @?/UqrsUs`pt`

	x	\$ /		8	
1	AB r p			—	

2	~ r s		a	—	
3	> }		8	—	
4			c	2	
5	P 7 V 0 u :		c	2	} 0 \ F o] D Y
6	5 o y			—	
7	(: 2 ! }		8	—	
8	' ? (3		c	1	
9	2 j		D	1	
10	: Rt q : [u : y			—	
11	{ 0			—	¢

6.2.10 M A B * f A B 5 0 u * (, A B [: * A B ' z

7 m . r ; n

7.1 m .

7.1.1 A B 0 X] < / / " < X Y # K B z 7 A B # 0 X w 8 ? | < . * 0 b .
* \] w 8 + z

7.1.2 A B y | 8 H * 0] 0 X Y • Q R * 3 R Q F X z

7.1.3 A B y |] 6 2 0 u u ! A B ; # @ A * ' b (y } % A B z

7.1.4 A B ^ + (* 6 C 9 F X < A B 0 X * x 3 q X y + X < R * E 0 u 0 [u : z

7.2 m ` G

7 8 k • 7-1 z

` 7-1 m `

	k 7	k a V		
		W	H	S
1	< X Y Z \ q X A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z N 7 8 N 7 N 7 q N				

7.3 ; n

7.3.1 2 < X Y _ X ~ R ^ X ~ R / X ~ R A B 0 X 7-2 # 1 0 . 5 6 T f A B - 2



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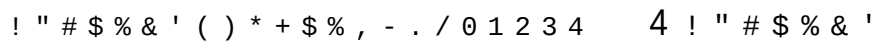
! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$

1 > 6 2 o U &

NTSSY-ZW-03-01/01

2 o y		2 o u 7		= > W	> W	+ d V
> * ! k 6						
	A B x	C D	)	k 6		
1	" } 0 l	q 0	! _	o U		
2	/ o U > D 6 D	2	! _			
3	" / X A B n o	q 0	! _			
4	A B 0 u P 8	M * } 0	! _			
5	w 8 v Y a • * A B 0 X < /	5 " K	! _			
6	c 0	q 0	! _			
7	- . 2 3	5 K L	! _			

 $[1 \ Z \ 0 \ V \ W,$

175



X Y

1	%	29
2	;	29
3	o U \ 3	29
4	>	30
5	o U •	30
6	o U a	31
7	7 8 k 6 ! B ~ •	32

1 Z [\]

Z [A B M q ! y b 1 u ' 0 W 5 Z 9 > ? a N # " # ` a % 0 W 5
] 0 0 W q > Z X # b 1 * M] 0 0 W 5 > h 2 o ^ D 4 M # , D = w z m 6
G , ? 5 Z [A B 2 o * \$ % Z [A B o U * ` a 0 1 G H R S k 6 2 o U p q r z o U p q
r # | } _ h ~ • U ~ • ` a 0 1 ~ • ! " f # = > \$ % \$ l z
7 o U p q r Q 110yF5+5+26

4 e f g h i j k l m

4.1 0W<XYxy^|0XAB}zM{0w8AB62 *62Q M !Q oUe" 6
2# *|}n014562> &• p`stvwxnp`syn(123> \$%2o*•
!e"# * z

4.2 np`s^ 0W<XYxy^|0XAB}zM{0w8AB62"fo#n0145>
62oU&st NTSSY-ZW-04-01/01y*'s -./0+X (G* *\l) * =
>W > 62oU&*> W **62+dV,'z

4.3 62+dV*2 k 6*0{ - ./(2 JoUVW+X> Z0*[1Z0#oU
VW+d > 62-34oUe"A- ^z

4.4 > 62oU&562+dV 6b*2o0P u7D<y489 10:*;<10:
=@>LoU&*{2o (ZQ M]? @z

4-1 oUe"> &• p`

	A B x	C D	)	k 6
--	-------	-----	---	-----

1 }05



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4

4 ! " # \$ % & '





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！ "



>) Q/: N 0							



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X Y

1	%	37
2	;	37
3	o U \ 3	37
4	>	38
5	o U •	38
6	o U a	39
7	7 8 k 6 ! B ~ •	39

4 e f g h i j k l m

4.1 < X Y ~ R < • A B 6 2 * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6 2
> & • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ < X Y ~ R < • A B 6 2 " f o # n 0 1 4 5 > 6 2 o U & s t N
TSSY-ZW-05-01/01y* ' s - . / 0 + X (G * * \ l) * => W > 6 2 o U
& * > W * * 6 2 + d V , ' z

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U
V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :
= @ > L o U & * { 2 o (Z Q M] ? @ z

4-1 o U e " > & • p `

	A B x	C D	)	k 6
1	" } 0 l	q 0	_	<div> <div>AB 2 o</div> <div>* 2 o + d V </div> <div>. R V W Z ~ I</div> </div> <div> <div>W 2 o u 7</div> <div>2 o 0 P</div> <div>> 6</div> <div>10</div> </div>

3	> }		8	—	
4			c	2	
5	P 7 V 0 u :		c	2	} 0 \ F o] D Y
6	5 o y			—	
7	(: 2 ! }		8	—	
8	' ? (3		c	1	
9	2 j		D	1	
10	: R t q : [u : y			—	
11	< X Y ~ R < • w A v			1 y 2	
12	` % & 7		7	—	

6 0 1 # u

6.1 . / n o

6.1.1 < X Y ~ R < • w | { b \ A B Q > { ~ R) * { 0 u + X z | [: m
A [: a V * F , 2 < X Y # 4 D ~ R + X w z

6.1.2 n ` A B • 2 o * s # A B v Y * 0 { f 5 * [A B 0 u z

6.1.3 (, < X Y / ^ _ X # ! ^ 3 7 4 M # 8 [: 0] 6 @ V > U m * (, # : W 4 q
m w < X Y 8 K * 2 Q 8 K : + (, # < X Y * 4 8 K o R | + X w * l
| k * 0 | # v # w ' 2 o z

6.2 . / 0

\$ l A B a 0 A B [: z
t1y < X Y ~ R # P R | S 3 * [n f # b f * \$ { 3 / * [v w * |] 0
C ? w y * [n f ! • Q " # z
t2y w I o * b [: ! | H l 4 < * L [q 0 v z
t3y D I w # [u : ! | 4 < 8 [{ < X Y 4 5 (# k [u t C [u * 3 f
7 [u y * [u : | W 4 q A D | p ~ z
t4y ~ R < • w A q A ' z
t5y 2 4 ~ R + X ~ R < • w A * 0 2 + X * w E z
t6y M A B * f v Y 0 u * (, A B [: * A B ' z

7 m . r ; n

7.1 m .

7.1.1 A B g 8 [: A ~ R " | # A B a 0 A B [: z

7.1.2 w A y < X Y 4 # 8 K : | M (, * W 8 f z 4 M _ f z A B 0 u 1 3 _ f z \$
q 0 _ z

7.1.3 w 8 0 K s [u : | W 8 t 3 f < X Y # C 7 [u * [u 7 b f * / 0 \ #
\ @ \ z

7.1.4 8 y V | m 8 K * , U | Q 1 m * u z / l # w 8 ' l 2 z

7.1.5 b n f | & { { 3 * [t L , y w 8 * 8 X ~ R w 8 2 l X < X Y | {
, * [+ X w 8 z



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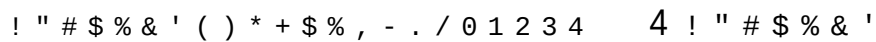


1 > 6 2 o U &

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2 o y		2 o u 7		= > W	> W	+ d V
> * ! k 6						
	A B x	C D	)	k 6		
1	" } 0 l	q 0	! _			
2	^ 0	q 0	! _			
3	/ o U > D 6 D	2	! _			
4	/ a 2 2	X	! _			

5 - . 2 35



j k Nt , y 7 & 5 => W * > W * * + d V , ' 1 z + d V n 2 * 2 k 6
0 2 0 zt t y 2 o 0 P u 7 > 6 D < y 7 & 3 x 4 4 : * 5 6 | = @ > & * (Z @ \ V W ' <
7 y * | { p % & < 7 / 0 z 2 @ V W + X Z 0 * 0 , \ \ zt y | # % A *) >
Q : N 0 ± 8 y \) & •) D , d y * Q M | R S " f V W = @ + X \$ % 0 k l 6 ± 9 y
& •) k 6 { n 2 : ; zt < y , D = t N > , # y ! o } & • L z



X Y

1	%	43
2	;	43
3	o U \ 3	43
4	>	44
5	o U •	44
6	o U a	45
7	7 8 k 6 ! B ~ •	45

Z[ABMq!yb1u' 0W5 Z9 >? aN# " #`a %0W5
]00Wq > ZX#b1 *M]00W5 > h2o^ D4M#,D= wz m6
G,?5 Z[AB2o*\$%Z[AB oU*./01GHRs kZ[AB~•GoUpq r z
oUpqr# |]_h~• XU~• U~• `a01~•! "f#=>\$% \$lz
7oUpqr Q 110y500kV 0X)@>?# }_h" f AB~•ABs #0=
5 Z[AB*7oUpqrD Q>? { v b A #0=5 z7oUpq
r20 Z\qXZ[AB#5o- => 7 > H Q A 7* OP+Xm # \$
%* Qpq 110y500kV 0 #Z\qXZ[AB2oz

x | 5-0xkm7F5-Bm00750-505H54(9)UJ(1360741Wz-0nD0F5255B02



! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & '

h4hijkhij\$4hijk\$hf g h i j k l m



X 6.2.6 - * < A B z

6.2.9 ? w 8 ! " 0 # 0 v z

6.2.10 ; ? + X " # A B * A B z

7 m . r ; n

7.1 m .

7.1.1 A B 5 B s z

7.1.2 2 0 # o q X A B w 8 0 v y * | * { C , " (+ X z C , " (+ X A B w 8 y * " q J b c K b c 8 A t ? s , Q [u z

7.1.3 2 b c K b c 8 , [u * , b D s < 0 X] D Y # D 0 o Z \ q X A B y * D s < 0 X] D Y A [* , # 0 b c K b c 8 + y [u z

7.1.4 A B 0 X] < / / " 2 0 # K B z 7 A B # 0 X w 8 ? | < • * 0 b • * \] w 8 + z

7.1.5 2 0] X * | + X A B 5 # F X @ A B y | 8 H * 0] 0 X Y • Q R * 3 R Q F X y % ' 0 X < z

7.1.6 A B y |] 6 2 0 u u ! A B ; # @ A * ' b (y } % A B z

7.1.7 A B ^ + (* 6 C 9 F X < A B 0 X * x 3 q X y + X < R * E 0 u 0 [u : z

7.2 m ` G

7 8 k • 7-1z

` 7-1 m `

	k 7	k a v		
		W	H	S
1	0 Z \ q X A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

7.3 ; n

2 0 + X Z \ q X A B ^ * A B < 3 + m n { 0 (/ 0 * 6 A B H < z 0 Z \ q X A B 0 X A y 7-2 r z

` 7-2 \$ V a T : ; \$ T

$l \ 0 \ X \ U_N / U_t k V y$	A B 0 X	y t min y
18/30 ! u v	$2.5U_N t \ 2U_N y$	5 t 60 y
21/35 y 64/110	$2U_N$	60
127/220	$1.7U_N t \ 1.4U_N y$	60
190/330	$1.7U_N t \ 1.3U_N y$	60
290/500	$1.7U_N t \ 1.1U_N y$	60

7 8 B n 10kV y 500kV 9 < 0 ! J 0 2 3 7 8 B \$ l ~ • L 4 K N < 0 0 = A B 2 3 s ^ # Q/CSG 4-16.1.1 Q/CSG 4-16.2.1 y 4-16.2.4 m X z

1 > 6 2 o U &

B 8TSSY-ZW-06-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				
	A B x	C D	)	k 6
1	AB5 E?y FGDH	5 "K	! _	oU X"f> \$3!> => 6*0 =7f lDcQuv 6N
2	AB5 E?y DV> D 6 D	X	! _	! 2oVW e\ > 2o A 8z ! 5 QE @F} *\\FGnoz ! 5 QE<3^ {5 E`#evaz5 0FyD < *~Hl 2oz
3	AB5 E?y }05 > UmdV	M*}0	! _	! 2oVW hi * }05]6@V#> UmzET 560VW5o*E?<3^ b gVpM Dz
4	" }0 l	q 0	! _	! AB2o *2o+dV .RVWZ>IW2o u7 2o0P > 6* }0M A> H Qz
5	/oU> D 6D	2	! _	! 2o *2oVW k\2o *0\l> # /;:z /oU > }* > } {2o no '-ole(z @ M5 f* bV * V HW ~^* 2 V2o Q Do z
6	" /XAB no	q 0	! _	! AB2o *2o+dV \l2o% *5 > p*D b`#*{> p\$ V D* %+fVW+"z
7	AB0uP8	M*}0	! _	! 2o 62 <0 mfIW+y620 u X0uP8/0*Dqc 0unf#P8* \]AB0uP86@ mz
8	nfABst ^	5 "K	! _	! AB gV's l3 2nf [st+ X*\\+ a4n`ABz
9	c 0	q 0	! _	! X !y 5u:*~)*{0 a45oz
10	- . 2 3	5 KL	! _	! 2oVW{AB' +X\` @*\` + - . 2 A/e

		>) Q/: N 0						
		[1 Z 0 V W ,						

>W/F1 9.15+3 Tf18.24 re8080 #\$/F1 9.15+2 Tf18.24 080 6D/F1 9.15



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4 ! " # \$ % & '

\$ a U ;

0 1 2 3 4

N TSSY-ZW-07



! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

1 Z [\]

7 o U p q r Q ` a 0 1 G H % 0 @ ? 5 ! Z X ^ # 3 8 0 \] ^ Y t 0 \] ^ Y 3 8
~ R y # B z

2 B L ^ _

` 22222

4 e f g h i j k l m

0

4.1 0 \] ^ Y B 6 2 * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5

6 2 > & • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ 0 \] ^ Y B 6 2 " f o # n 0 1 4 5 > 6 2 o U & s t N

TSSE0.56 Tf10.807D0(242Tz(3)F5j00E56(Tf16T08/017E5012410.56 Tf10.8 84 TD (Q) T Tc (sy) Ty*/F5+4 10.56 Tf

e H X z ` % & t | + y • DL/T 506 & A z
6.2.5 w t t 4 y z , U m { f g / 0 v + X B * \ ' A 0 \] ^ Y # ; y * .
/ + X w t B z 3 # w t a | ~ s (~ # => ^ \$ l # w t a A m \$ z
k " a \$ l * \$; w t z
; w t N { 0 \] ^ Y # t ? # [, D " \ Q l + 10 y 20 G # 4 < 0 v * , ? H u 2 P
Z \ 0 \ * 0 \ T R : u F < l 0 \ # 120 1 * 0 \ ! u < R * : ; ? L 4
< 0 v < # 1/2 1/5 1/10 * = * (< 3 z
2 Q ?) # 0 \] ^ Y * w t y C # t ? ~ R ! | A ; \ , D C ^ b D t ? ~ R
y * # t ? ~ R [w t 0 v * # t ? ~ R n ; z
6.2.6 ; 3 8 0 \] ^ Y t 0 \] ^ Y # 3 8 ~ R y # • \ () 0.2 0.2 S) *
. / • 6-1 z w E A 0 \] ^ Y # M 5 s * | u X # • z # X l • 6-2 z

` 6-1 \$ a U ' -----

• \)	$I_p/I_n t_1 y$	1	5	20	100	120
0.2	t 0 1 y		0.75	0.35	0.2	0.2
	" t 0 y		30	15	10	10
0.2S	t 0 1 y	0.75	0.35	0.2	0.2	0.2
	" t 0 y	30	15	10	10	10

` 6-2 -----

• \)		"
0.2 0.2S	0.02	1

7 m . r ; n

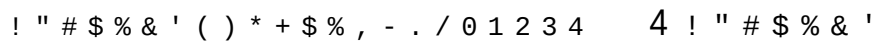
7.1 m .
2 3 8 # 0 \] ^ Y 0 \] ^ Y # 3 8 ~ R * w 8 y 0 #] . 3 0.001 1 * "
] . 3 0.01 z w E A # 0 \] ^ Y M 5 s * | { l + A v c + y # M 5 w s 6-1
m z
2 w 8 ^ ; < 6-1 # m * l D ; < 1.5 G y * | ! + X * w z
7.2 m ` G
7 8 k • 7-1 z

` 7-1 m ` -----

	k 7	k a v		
		W	H	S
1	0 \] ^ Y A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

7.3 ; n
0 \] ^ Y B | R JJG 1021 2007 0 W] ^ Y s # Q/CSG 4-7.1.3 Q/CSG 4-7.2.2
Q/CSG 4-8.1.3 Q/CSG 4-8.2.2 m + X z



 $[1 \ Z \ 0 \ V \ W,$

209



X Y

1	%	57
2	;	57
3	o U \ 3	57
4	>	58
5	o U •	58
6	o U a	59
7	7 8 k 6 ! B ~ •	61



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

4 e f g h i j k l m

4.1 0 X] ^ Y B 6 2 * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5
6 2 > & • p ` s t v w x n p ` s y n (1 2 3 > \$ % T c 4 (` 4 T j - 2 . 2 8 T (f 3 1 . 4 4



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& '-----

] ^ Y

ç " 0 X] ^ Y

^ Y) o F X Y z

ð X] ^ Y y * |





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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

t3y A 2 M 3 / X a : # / X : (, * (, y g [u : a : [u z (,
a : o * A # U m N 500kV) D Q

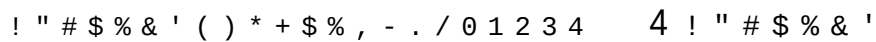


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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

	" t 0 y	10	10	10
--	---------	----	----	----

* 500kV 1101 n 4 l S 2 5 1 . 5 X 9 . 1 2 T f 2 . 8 8 0 T D (y) T \$ 7 T D () T j / F 1 .



j k Nt , y 7 & 5 => W * > W * * + d V , ' 1 z + d V n 2 * 2 k 6
0 2 0 zt t y 2 o 0 P u 7 > 6 D < y 7 & 3 x 4 4 : * 5 6 | = @ > & * (Z @ \ V W ' <
7 y * | { p % < 7 / 0 z 2 @ V W + X Z 0 * 0 , \ \ zt y | # % A *) >



X Y

1	%	65
2	;	65
3	o U \ 3	66
4	>	67
5	o U •	69
6	o U a	71
7	7 8 k 6 ! B ~ •	90



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

1 Z [\]

T M) T 0 = 5 ^ = # 7 > , * b I J A] D C ~ R !



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4

4 ! " # \$ % & '

3 0 1 a b

o U t 2 y \ 3 • 3-1 z c3-1 01 /d!abc

4 e f g h i j k l m

4.1 T Z [A B 6 2 * 6 2 Q M ! Q o U e " 6 2 # * | } n 0 1 4 5 6 2 >
& • p ` s t v w x n p ` s y n (1 2 3 > \$ % 2 o * • ! e " # * z

4.2 n p ` s ^ T Z [A B 6 2 " f o # n 0 1 4 5 > 6 2 o U & s t N
TSSY-ZW-09-01/01y* ' s - . / 0 + X (G * * \ l) * => W > 6 2 o U
& * > W * * 6 2 + d V , ' z

4.3 6 2 + d V * 2 k 6 * 0 { - . / (2 J o U V W + X > Z 0 * [1 Z 0 # o U
V W + d > 6 2 - 3 4 o U e " A - ^ z

4.4 > 6 2 o U & 5 6 2 + d V 6 b * 2 o 0 P u 7 D < y 4 8 9 10 : * ; < 10 :
= @ > L o U & * { 2 o (Z Q M] ? @ z

5.1 M N p o

` 5-1 M N p o `

2 x	4 2 o V	+ d V	D V
.	< M 2	1	
	< M 2	1	1
% &	< M 2	1	
A B • t1 Q y	< M 1	1	
T A B t1 Q y	< M 1	1	
A B % & *	< M 1	1	
N o U V J 2 3 8 \$ J z			

5.2 @ ? / U q r s U s ` p t

` 5-2 @ ? / U q r s U s ` p t `

2 Y ! v Y v					
	x	\$ /		8	
1	~ r s	m \$	D	—	
2	>	m \$	2	—	
3	> } A / 2 t y	m \$	# t y	—	/ a o U y
4	K 2	m \$		, 8	
5	' ? (3	~ •	c	1	
				—	
7	g b c 250mL (g t y A V W O Q 20 y 100mL Y b c H } k K t q T y Y M	m \$	D t y	—	



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 34434 345v4 3426.j/0F2ET 1 1 rg 07536 76432 7m7536 73816 0SBT/F25

` 5-2 t 9 y

	x	\$ /		8	
24	A	t t & • A y t t & • A y d G t * y t * * " 2 8 (1.19 y T t * y t * y t t A ! + X _ * _ ' (100 i y 110 i		—	
25	8 7 v	{ ' y -60 i		1	
26	j	{ ' y 300 i		1	



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

t 4 y) T 0 # 8 K + X T # A B y * 4 GB 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [
0 / . 5 6 T f 0 0 / F 1 9 . 1 2 5 0 5 0



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4

6-3t9y

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
7	3) * w 8 ' 2	6 ? 8 9 w l # 0 X #) > : ! * o : ! 0 X	D # 0 D * w E A B ' 2	D A B a m # A B 0 D * 0 X ' 2 b (N 1 y G B / T 507 M C 0 2 y D L / T 429.9 a M : 0 3 y G B / T 7595 2000 ^ # A B m : 0 w l 4 y 3 C D • s 0 w # 0 X > # (• ~ • # &
2 o '				
1	@ 4 Q A B ' 2	% & 0 ,	w 8 • \	@ 4 Q A B Q M 5 = % & M 5 • \ * 2 o + d V ! 4 A B V W { A B % & (, \ \
2	I J 2 o	I J 0 ! T	0 A T J G	I J 0 A T * 2 A # A B ' 2 D s * ! I J # T 3 .
3	0 T # ? {	C ? 2 o * T " J G # T t 0 { T ^ y	0 M U " { J G # T ^	J G T U " 0
4	I L ' 2 o	I L A B 2 o h # / e * A B # } T f 8 9 / ? {	f z x y	d # + 0 E F e ~ ^ 3 x y e ~ • * } T f 8 9 ? {
o U ^ 4 q # (o ! 2 0				
1	0 X A B	w A (	1 y + , # M 5 w s m 2 y + , ? T Y M 5 I J _ 3 y + , A B T M 5 1 ? D s R 4 y 0 F * 0 U L m 5 y = @ + X A B	

6.2.3 g U * t • 6-4yz

6-4) * 7 j `

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
A B • 2 o				
1	@ ; T	A B V W @ ; M 5 \$ %	1 y R 9 ~ , % & I 2 y w s m 3 y { b 1 _ 0	1 y @ R 9 ~ , % & 2 y @ M 5 w s m 3 y @ y
2	@ 0 • v Y	1 y n g N @ g U v 4 8 [0 [u : u ! 4 = ; 8 [M 5 • \ b f z y 7 + # 7 Q z 2 y : n = = a = } ! 4 L X } * X W 9 < 8 / Q v Y 2 o y X W z 3 y w v Y 4 = ; H X } * 4 = ; X W \ 8 w s v Y 2 o m	1 y = J + { 2 y = J X W e 3 y X W \ 8 w s v Y 2 o m	1 y : n 4 = J @ 4 = J } L X } u ! 4 = ; 8 [M \ \ + = J { 2 y @ \ \ = J X W 9 < 8 / Q v Y 2 o y X W 3 y @ \ \ v Y 4 = ; X W \ 8 w s v Y 2 o m



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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4

` 6-4 t 9 y

	2 0 0 P	5 o ! 2 M	7 8 k 7	k 6
4	v Y ~ l	v Y # ~ l N 4 ~ l 8 z 1mL Y D • \ d 4 R * Y (# ~ • s = J 1mL t 0.5mL y + X ~ l z T 3 # g U (% & 4 R * # { N B A _i s t { / h _i s y z ~ l v Y { v Y Z X 2 0 H l , " # # v + X * < M = * 5 o 2 ? * 2 ? ~ l # = * 3 { : ! # 0 2 1 u 0 * : ! o v Y ~ l # ' 2 z C ? A B ! ~ l v Y	v Y ~ Y ~ ~	

6.2.4 T ^ N = 8 * t • 6-5y

` 6-5 0 9 7 j `

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
A B • 2 o				
1	@ ; T	A B V W @ ; M 5 \$ %	1y R 9 ~ , % & I 2y w s m 3y { b 1 _ 0	1y @ R 9 ~ , % & 2y @ M 5 w s m 3y @ y
2	@ 0 • v Y	1y n g N @ g U v 4 8 [0 [u : u ! 4 = ; 8 [M 5 • \ b f z y 7 + # 7 Q z 2y : n = = a = } ! 4 L X } * X W 9 < 8 / Q v Y 2 o y X W z 3y w v Y 4 = ; H X } * 4 = ; X W \ 8 w s v Y 2 o m z 7 + # 7 Q t y y	1y = J + { 2y = J X W e 3y X W \ 8 w s v Y 2 o m	1y : n 4 = J @ 4 = J } L X } u ! 4 = ; 8 [M \ \ + = J { 2y @ \ \ = J X W 9 < 8 / Q v Y 2 o y X W 3y @ \ \ v Y 4 = ; X W \ 8 w s v Y 2 o m

1y \ \ d : n 4 = J :
n v Y 0 u n f * n b 9 g * :
n 4 ' (k Y F ' n f * 5 l
@ s { T C D F I D ! : q ;
r G Y ' (z

3 n b A B v Y ; q n y \ G Y - . 2 9 4 - 1 8 . 2 4 - 1 1 . 7 6 = c (y \) T j / F 5 + 3 9 . 1 2 6 1

` 6-5t 9 y

	2 o o P	5 o ! 2 M	7 8 k 7	k 6
3	r : =	1y A = Y # • N 5mL Y C * M 8 A T Y B O = 1y 2 ? * " 0.5mL A T * 8 (@ 9 * " 1 * 1 (z Y 0 # a = A A T t * A T) 6 Y 0 = D d c ? a = z 2y r : = N Y A T Z & ^ * ^ # : = H < 1 r 3 Y C O t e X r y z { ' v { 2min * • \ % & J B t • \ < 0.1mL y * u g U *	1y Y C d M 8 A T Y B O = 2y r : = e X r	1y \ \ Y C d M 8 A T Y B O = O w s m 2y \ \ r : = d e X r
4	v Y ~ l	v Y # ~ l N 4 ~ l 8 z 1mL Y D • \ d 4 R * Y (# ~ • s = J 1mL t 0.5mL y + X ~ l z T 3 # g U (% & 4 R * # { N B A i t { / h i s y z ~ l v Y { v Y Z X 2 0 H l , " # # v + X * < M = * 5 o ? * ? ~ l # = * 3 { : ! # 0 2 1 u 0 * : ! o v Y ~ l # ' 2 z C ? A B ! ~ l v Y	v Y ~ l { v Y Z X 2 0 H l , " # # v + X	\ \ v Y ~ l d { v Y Z X 2 0 H l , " # # v + X
5	*	A * N 1mL Y D T Y C ^ • \ = 1mL t 0.5mL y * + X * z + y 5 o 3 + 1 1 1 z T 3 # g U (% & 4 R * # { N B A i t { / h i y z * v Y ~ l , + Y * " + J B	1y + y 5 o w s m 2y * v Y ~ l , + Y A " + J B	1y + y 5 o 3 + 1 1 1 2y \ \ * v Y ~ l , + Y * " + J B
6	' 2 * 3)	G V 3) T ^ 4 * R * Y (t 5 g U 2 o y		
7	% & * ' 2	{ g U 2 o N) L * d = t O 2 y = t N 2 y , d G t C O y t d G t C O 2 y # { / 0 * % & 4 = J R * N 8 * G V 3) T ^ N = 8		
8	* ! w E	} GB/T 7252 n < X Y T ^ e f = J * A w E q 6 s DL/T 722 n < X Y T ^ e f = J * A w E q 6 s + X * w E		
A B '				
1	@ A B % &	A B V W @ A B % & M 5 • \ I z 2 o + d V ! A B V W { A B % & (, \ \	1y ? = * A B ' 2 # D ; < . / 2y A B % & • \ I	1y @ \ \ ? = * A B ' 2 # w s m 2y @ 0 \ \ A B % & • \ I



! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & '

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` 6-5t 9 y

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
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! " # \$ % & ' () * + \$ % , - . / 0 1 2 3 4 4 ! " # \$ % & ' -----

` 6-6 t 9 y

2 0 0 P 5 0 ! 2 M 7 8 k 7 k 6 78 78

` 6-6 t 9 y

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
o U ^ 4 q # (o ! 2 0				
2 x D 3 m * 4 q M 5 Q N W v w D \				
1	a I w l	w 8 9 a = # N W y 3		
) ' 2 D 6 @ 71y72mN/m # m				

6-7 t 9 y

	2 0 0 P	5 o ! 2 M	7 8 k 7	k 6
A B ' 1				
1	@ 4 Q A B % &	% & 0 ,	w 8 • \ I	@ 4 Q A B Q M 5 = % & M 5 • \ * 2 o + d V ! 4 A B V W { A B % & (, \ \
2	A B ' * f v Y 0 u * v Y 0 I L A B	1 y N f 0 t 4 5 Y n f * : f v Y 0 u n f 2 y I L A B 3 y Y {	v Y 0 u f	@ \ \ v Y 0 u d f
o U ^ 4 q # (o ! 2 0				
1	v Y A A e * T *	1 y v Y n b x y D : 2 y " A T w l y x , -	= @ 7 0 f * ~ v Y : = @ w l	

6.2.7 m 7 w 8 t • 6-8 yz

6-8 .

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
A B • 2 o				
1	@ ; T	A B V W @ ; M 5 \$ %	1 y R 9 ~ , I I 2 y { b 1 _ 0	1 y @ R 9 ~ , I I 2 y ; ! y
2	@ 0 • v Y	1 y @ # m 7 w l v 0 u : M 5 d 8 [f 2 y @ = L X } ! K M 5 8 [f	1 y A B v Y 4 < [u 2 y = {	1 y A B V W N @ [u / 0 : n v Y 0 u 2 y \ \ K 8 9 b f
A B 2 o				
1	*	1 y T A T 1 y 2 ? z 2 y A " T * ^ A ? 6 3 s ~ % • *: (I J _ # * " ' (3 * { + w A v z 3 y : n v Y 0 u n f A 7 = n f * 5 s # m 7 ' (z 4 y A B n `] (! (F * 0 D E + X 4 5 z < _ m 7 2 0 i y * F ' (k { C * X F / 2 y 3 i * 0 D E + X 4 5 z 5 y v Y 7 Y = 7 * 0 < I 3 [• * 3 y 4 m m z 6 y A ' (3 x _ m 7 1 0 i y * 2 Q m 7 / Q 1 0 4 i A C F / 2 i 7 , ? * 2 Q _ Q 1 0 4 i A C F / 1 i 7 , ? * < m % * % & w l ' 2	1 y] 6 T J G 2 y < I w s m 3 y A B < 3 = \ R	1 y A T T _ G 2 y < I 3 [• * 3 y 4 m m 3 y A B { H Y 0 + X * 0 f g A * f z = \ R

` 6-8t 9 y

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
A B '				
1	@ 4 Q A B % &	% & 0 ,	w 8 • \ I	@ 4 Q A B Q M 5 = % & M 5 • \ * 2 o + d V ! 4 A B V W { A B % & (, \ \
2	A B ' * f v Y 0 u * = u v Y 0 I L A B	1y A B T 0 # T 3 g } T t } y 0 * l _ ~ ^ • L z A B T { z 2y f v Y 0 u z 3y f = L X } n f ! = K # n f z 4y I L A B	= L X } n f ! = K # n f d f	@ \ \ = L X } n f ! = K # n f d f
o U ^ 4 q # (o ! 2 0				
1	m 7 t # y w l t i y	1y m 7 v } % 4 5 2y 7 Y 3y 7 Y < g z	1y @ m 7 v } % 4 5 7 Y # 0 o • L * e = @ T A B 2y @ = X W M 5 = d M 5 a = \ N z * @ k 0 o • L = @ T A B	

6.2.8 w l t • 6-9yz

` 6-9 / • 2
* 440 T 980 (127) 475-2 8.12 T 19.170 (1) T 175 0.1 20.04 0.48 w 1.08 84-2 9.12 T 19.1800 T0 (Y) T0 0 T0 (1) T2 T 19.12 0 T0 (N) T 175-2 8.12 T 19.186 0.48 w 1 0 T0 (1) T2 T 19.12 0 T0 (N) 50 0 T0 2M75.6 546.38 26.64 66 0 T0 (N) T 175-12 T 19.187 T0 (1) T19

6.2.9 9 e 3 A B t • 6-10 yz

` 6-10 0 / : ;

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
A B • 2 o				
1	@ ; T	A B V W @ ; M 5 \$ %	1 y R 9 ~ , I I 2 y { b 1 _ 0	1 y @ R 9 ~ , I I 2 y ; ! y
2	• 4 C v Y Y A	1 y Z • * g K N + X I * E d 9 * 3 9 G * _ 2 y @ A B 9 t p H 6.0 y 7.0 * 0 q Q Q 3 μ S / c m y A 4 C A p H p r p H ~ • e w s 7 8 m 0 { b 1 _ 0 3 y @ 9] Z v 0 u 8 [:	1 y Y w s m 2 y A w s m	1 y \ \ Z • * g K w s m 2 y \ \ A B 9 A 4 C A p H p r p H ~ • e e w s m { b 1 _ 0
3	p H p r J k t • 6-11 y	1 y J J k a • 4 ^ 2 y 2 y J k f # p H p r { 8 # 0 g A 0 *] ? { L] •	p H p r w s m	I p H y] " e
4	p H ~ • e J k t • 6-12 y	1 y 0.2mol/L t e J k N x 40.846g t * e Q 8 , 9 t t ? 9 y * " 1000mL P 8 * , 9 t t ? 9 y e f <) (2 y 0.2mol/L t e J k N x 27.218g t * e Q 8 , 9 t t ? 9 y * " 1000mL P 8 * , 9 t t ? 9 y e f <) (3 y 0.1mol/L J k N 8 B 8 16.8mL Y " 1000mL P 8 * , 9 t t ? 9 y e f <) (t S e Y (0.2mol/L y * g ~ + 9 + 9 d # " Y (# ~ • ` e + X ~ l * : e f 0.1mol/L 4 y 0.1mol/L d G e J k N + x 8g d G { " g ^ *] " 50 y 60mL 9 e f * " 1000mL P 8 *] 2 y 3mL 101 # A G h e u [\ * : 9 e f <) (* 7 i I z (s I t S e Y (0.2mol/L y * t d # " Y (# ~ • e + X ~ l * : e f 0.1mol/L 5 y (3 y > E (e J k p H D # p H ~ • e 	p H ~ • e w s m	m J k p H ~ • e

` 6-10t 9 y

	2 o 0 P	5 o ! 2 M	7 8 k 7	k 6
A B 2 o				
1	9 e 3 A B t g • g y	1 y 8 50mL A T Q 250mL Z • 0 *] " J B N < # 9 *] t k y < 70 y 80 i * 0 { S ' (v 2 F 5min t { { 9] Z v (o l 2 F 5min y 2 y Z • ^ # J " * 0 * ~ * s 0 < { ' * 10mL 9] " g K ^ * * pH3.6 y 5.4 % # D pH ~ • e 10mL *] " # g K ^ * y { (4 g K ^] " 0.25mL p r t D pH ~ • e J g ! y * 2 { " g • + X g * % & pH 3 y \ T # pH Q 5.4 y * 6 j / P o p r	1 y k] ' (A Z y 2 y * 8 9 f	1 y m 5 o ! 2 M m + X 5 o 2 y \ \ * D * y , l E _ G 0 = @ @ (8 9 t a b c y
2	9 e 3 A B t g 3 g y	1 y 7 1 5 o a 1 y 2 y Z • ^ # J " * 0 * ~ * s 0 < { ' * 10mL 9] " g K ^ * y] " 0.3mL p r * 2 { " g 3 # g & g & + X g * % & pH 3 y \ T # pH Q 5.4 y * 4 o p r	1 y k] ' (A Z y 2 y * 8 9 f	1 y m 5 o ! 2 M m + X 5 o 2 y \ \ * D * y , l E _ G 0 = @ @ (8 9 t a b c y

A B ' | 5 R B | R

B @ ` R

6-11 pH 2 1 p

p r x	< g %	J k a
	3.8y5.4 M y	0.1g 7.5mL0.02mol/L d G , Q i * , 9 e f < 250mL z I pH 4.5y5.4 N g * p r I pH 5.4
P	5.2y6.8 M y P	0.1g P e Q 9.25mL0.02mol/L d G ^ * , 9 e f < 250mL z I pH 6.0
t y	6.0y7.6 M y	0.1g e Q 8.0mL0.02mol/L d G ^ * , 9 e f < 250mL z I pH 6.0 N g * p r I pH 7.0

6-12 n 2 0 3 `

pH	0.1mol/L mL	0.2mol/L t mL	0.1mol/L d G mL	0.2mol/L t mL	e f < J B mL
3.6	6.3	25			100
3.8	2.9	25			100
4.0	0.1	25			100
4.2		25	3.0		100
4.4		25	6.6		100
4.6		25	11.1		100
4.8		25	16.5		100
5.0		25	22.6		100
5.2		25	28.8		100
5.4		25	34.1		100
5.6		25	38.8		100
5.8		25	42.3		100
6.0			5.6	25	100
6.2			8.1	25	100
6.4			11.6	25	100
6.6			16.4	25	100
6.8			22.4	25	100
7.0			29.1	25	100

6.2.10 x y (w 8 z
t1y * V W + " J G { | W _ G I k t l b ' (0 (_ G y * z 5 o y
D R z
t2y T t = N ? b T # t a b 9 y { " d " _ G 9 # ; I Y 0 t U "
2/3y* n b Z F t = 1y3min* : E F _ G z
t3y w A N w A v J 5 o v Y h + X Y Z s z n g * I 5 v Y 5 o | *
F - v Y X W < s % t M k \ y z , U k w y 30s 1 ? w
A z = * w A 3 ? * : ! o A B ' 2 z
t4y I v Y U v w A T * X W w S < R * ? (I | A t I | y * k X W + X
I 2y3 ? * 7 I | B t _ G I | y I 2y3 ? * (a I J k X W N

3min _ v Y z
t5y wA'2) \ lzT^ #•s,U 3CD N • m • • D\$
6 • z v Y w l # M4C•s # 1 z T^ * 0 # wA'2
2}n_ AS1638 I J (*) ~ • t • 6-13y* \ l T # NAS) * 0 3) 100mL T
^ o 5µm # z H 2 } ~ • y m C , * 0 % # D q ; < ~ • ^ " | *
0 # c * 5 6) • L z

` 6-13 NAS 0 4 5 7 6 n

t	*) /100mL y	p q * µm				
		5 y 15	15 y 25	25 y 50	50 y 100	>100
	00	125	22	4	1	0
	0	250	44	8	2	0
	1	500	89	16	3	1
	2	1000	178	32	6	1
	3	2000	356	63	11	2
	4	4000	712	126	22	4
	5	8000	1425	253	45	8
	6	16 000	2850	506	90	16
	7	32 000	5700	1012	180	32
	8	64 000	11 400	2025	360	64
	9	128 000	22 800	4050	720	128
	10	256 000	45 600	8100	1440	256
	11	512 000	91 200	16 200	2880	512
	12	1 024 000	182 400	32 400	5760	1024
N n _ r a r : 2 U o s / t A I A y NAS1638 N 1984 1 ' 0 z						

7 m . r ; n

7.1 m .
J 7 8 k 6 • 6.2 y 6.10 J # u z

7.2 m ` G
7 8 k • 7-1 z

` 7-1 m `

	k 7	k a v		
		W	H	S
1	< X Y A B			
2	/ X 0 o 0 h Y			
3	T U V 0 \] ^ Y A B			
N 7 8 k 7 ^ H N } 2 ~ 7 W N • 0 7 S N 7 z				

T A B Q A m • 7-4z

t1y T Z [A B t " Z X y o U t 2 y T 4 Q A B B ~ • | w s G B 50150 2006
n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s ^ 20.0.1 A 20.0.2 \$ l z) T 0 ! O
A X W j ^ # T 4 Q A B B ~ • | w s 18.0.8 \$ l z b X ? T "
n f T j 0 X | w s 20.0.1 \$ l z
t2y < X Y 0 h Y T ^ e f = J # g U * 4 ? w # ; D s N 8 z | + k z
@ ? < X Y 0 h Y T ^ H₂ s D = J N 8 t μ L / L y e , Q D \$; < v p N s N 20 *
H₂ N 10 * C₂ H₂ N 0 z
t3y 0 X) 66kV ! u (# T U V 0 X] ^ Y * ^ | q X A B * | 4 + X , ? T # g U
* * ? w # " D | b k z 2 3 q b] ^ # 0 X) 66kV ! u (# T U
V] ^ Y * | + X T ^ e f = J # g U * z T ^ e f = J R * N 8 t μ L / L y D \$; < v p
e , * s N 10 * H₂ N 50 * C₂ H₂ N 0 z
t4y 0 X) 500kV # 8 K T {) 7 y * \$ + X T ^ e f = J # g U * T ^ e f
= J R * N 8 t μ L / L y D \$; < v p e , * s N 10 * H₂ N 150 * C₂ H₂ N 0 z
t5y 0 X) 500kV # < X Y 0 h Y * } \$ l y 7 w 8 T ^ # N = 8 * D
| Q 11 t J B * y z
t6y 500kV ! u (Z \ < X Y T (\$ k { N Z t T y 100mL T ^ Q 5 μ m #
T 2000 D * 500kV ! u (\ \ < X Y Z t T y (\$ k { N 100mL
T ^ Q 5 μ m # T 1000 D z
t7y T \ + X s y * { s * | T # - . E N T + X * * '
2 | w s G B 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s 20.0.1 ^ L 3 11
Q # \$ l z T t | G B 50150 2006 n 0 = ? > ? 2 3 0 = 5 Z [A B ~ • s
20.0.2 ^ # \$ l + X T # A B z
t8y 2 +

11/17/5) 02(16/56 16 0043) 07/15(2) 10/56 54+10156 56 10 10) 56/05+2 (+) 56/15+7 10/56 54+110.56 11/15 56 3 10 56-X) 10/56+7 110.56 11/21.12+7

[illegible]

8

0 X

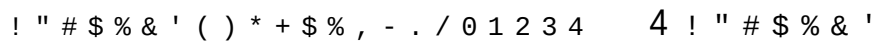
500kV N 0 60kV 5 0 0 0 0 kV F 5 + 2 9 . 1 2 1 T f 9 . - 6 0 k V
330kV N S 1 4 6 N . 4 7 9 0 . 8 m 1 4 # . 8 l S 2 8 V

1 > 6 2 o U &

N TSSY-ZW-09-01/01

2 o y	2 o u 7	= > W	> W	+ d V
> * ! k 6				MCD

A B x C D) k 6 q *



```
j k Nt , y 7 & 5      => W      *      >      W      * *      + d V , '      1 z      + d V n 2      * 2      k      6
0 2 0 zt t y 2 o 0 P      u 7      >      6 D < y 7 & 3 x 4      4 : * 5 6 | = @ > & *      ( Z      @      \ V W '      <
7 y * | {      p % & < 7 / 0 z 2 @      V W + X Z 0 * 0 ,      \ \ zt      y |      #      %      A      *      ) >
Q      : N 0      ± 8 y \      )      & •      ) D , d y * Q      M | R S " f V W = @ + X      $ % 0 k l      6 ± 9 y
& •      )      k      6 { n 2      :      ; zt < y ,      D =      t N > ,      # y ! o } & • L z
```