AQ8001-2007

[2003]114

2014 3 6 8

1 1

1.1 1

1.2 1

1.3 1

1.4 6

1.5 14

2 21

2.1 21

2.2 23

2.3 39

2.4 40

3 42

3.1 42

3.2 43

3.3 48

3.4 50

4 53

4.1 53

4.2 54

4.3 59

4.4 62

4.5 64

4.6 66

4.7 68

4.8 71

4.9 74
4.10 76
4.11 77
4.12 78
4.13 “ ”..... 79

5 84

5.1 84
5.2 104
5.3 106

6 107

6.1 107
6.2 111
6.3 112

7 115

7.1 115
7.2 116

8 125

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1.1

60 /

1.2

1.3

1.3.1

1 2009-8-27

2 2009-8-27

3 2013

4 2009-8-27

5 2009-8-27

6 [2004] 397

7 [2000] 296

8 2011 1 1

9 446

10 [2006] 466

11 [2009] 549

12

[2004] 8

13 [1996]

4

14 [2009]28

15 [1995] 56

16 “ ”

[2011]33

17 ( ) (

[2004]24

18 [2007]47

19 [2006]146

20 [2008]49

21 [2010]17

22

[2007]167

23

[2005]8

24

[2005]125

25 [2004]56

26 [2005]133

27

[2011]15

28 [2008]160

29 [2008]161

30 [2008]175

31 [2008]176

32 [2009]142

33

[2006]216

34

[2005]49

35 “ ”

[2010]146

36 ([2012]

16)

37

[2007]290

38

[2007]25

39

[2006]30

40

[2008]39

41

1.3.2

1 2011

2 GB6722 2011

3 GB 50383-2006

4 AQ1008-2007

5 GB/T50518-2010

6 AQ1028-2006

7 AQ1044-2007

8 AQ6201-2006

9 AQ1029-2007

10 AQ8001-2007

11 [2003]114

12 AQ1023-2006

13 MT390-1995

14 AQ1048-2007

15 AQ6210-2007

1.3.3

B

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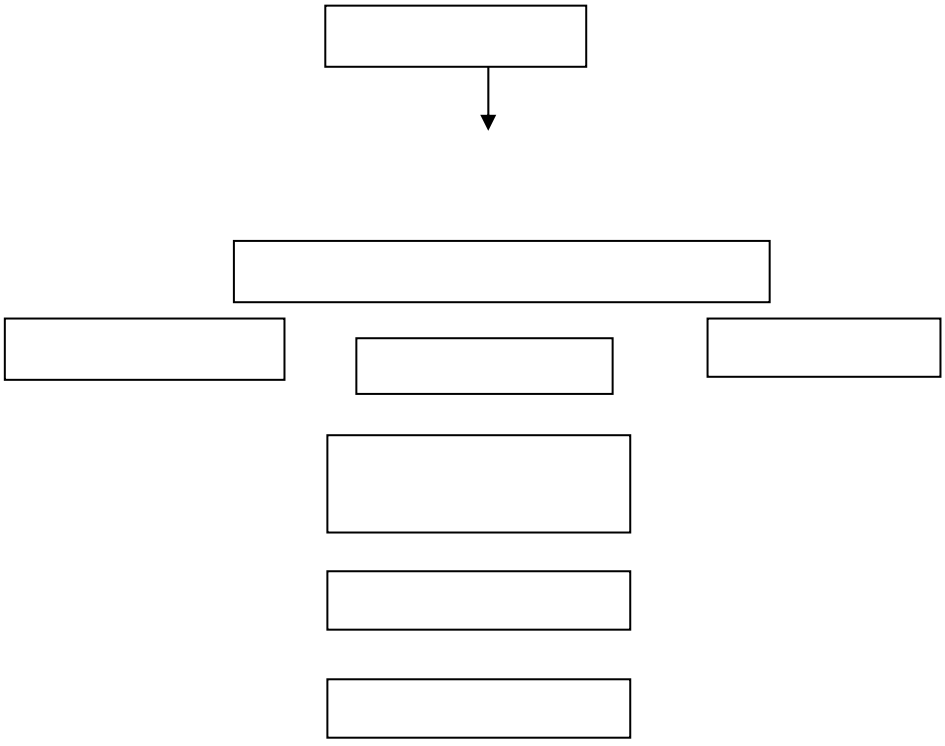
1.3.4

1.3-1



1.3-1

1.4

1.4.1

2013

7 29 C150000200908112003063 2

1

2

3

4

5

6 8.022km^2

7 0.60Mt/a

8 MK150201140040 2017

4 29 A150201140308 2017 4 29

9 150000000003196 2014 6 18

10 C150000200908112003063 2016 7 29

11 201527280493 2023 7 26

12 MK [2012]K125 2014 6

18

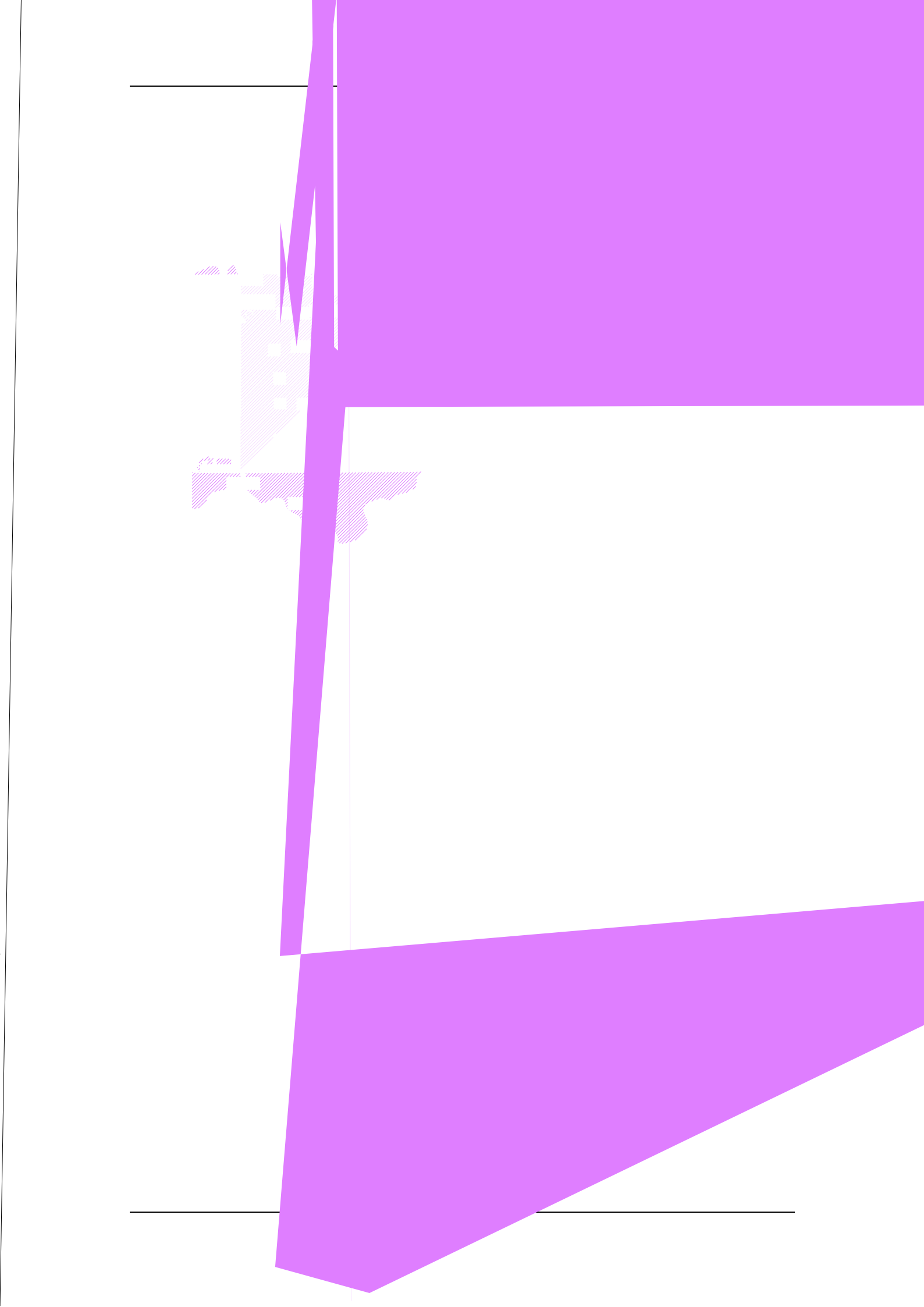
1.4.2

10°15 08 110°18 01 39°33 50 39°37 36

7.2km

54 km 109 20 km

1.4-1



1.4.6

T_{3y} J_{1-2y}

Q_{3m} Q_4

1 T_{3y}

16.4 557.59m 37.02m

2 T_{1-2y}

3

J_{1-2y1} 5-1

47.22 46.09m

5 6

J_{1-2y2} 5-1 3

68.93 77.69m

4-1

3 (N_2)

S_{13} S_{16}

6.16 41.86m 24.01m

4 Q

0 6.10m

210 260 1 3°

4-1

40 60m

30 120m

200 300m S14

100m

1

5 6 6 1 5-1

1 2 1 5 1

3 4-1 3 1 4 1

2

116.65 123.78m 120.22m 5

4.35 7.65m 6.00m 5% 1 2

1.85 5.20m 3.52m 3%

1.4.7

1

2 4-1 5-1

4-1

100m

2.00 3.70m

3.01m

5 1

1.00 2.10m 1.52m

—

4 1 30.16m

1.4-2

1.4-2

	~ ( )				
4 1	2.00 3.70 3.01 15	30.16(1)			
5 1	1.00～2.10 1.52(15)	12.86～14.45 13.66(2)			

2

1.4.8

“ ”

4810m^3/s

0.003 m^3/s 4.03 m^3/s

1

—

1

2 —

116.65 123.78m 120.22m —

3 4 5 6

67.54

106.19m 1200.51 1295m 8 13 q=0.000431

0.00241L/s·m K=0.00541 0.00715m/d HCO3 K+Na·Ca

HCO3·Cl K+Na 0.203 0.66g/L PH=7.6 7.7

Q=25m^3/d

2

J1-2y

J1-2y

3

J1-2y q<0.1L/s·m

q=0.00043 0.00241L/s·m ,

4

4-1

60 150m 100m

4-1

25m^3/d

5

25m^3 =5 m^3/h

=10 m^3/h

6

7

1.4.9

1.4.10

2012 6

0.984 m^3/min

0.510 m^3/t 0.738m^3/min

0.340m^3/t

2014 4 AQ1045-2007 GB/T20104-2006

1.5

1.5.1

3

+1267m 5-1

+1276.3m 10° 180m

3.4m 3.2m 9.61 m^2 1000mm

+1276.3m 6° 86m

3.6m 3.4m 11.53 m^2

+1376.3m 10° 51m

2506

1.5.3

1

FBCZ-6- 19 2 1

1 400/1280Pa 31.5/75m^3/min 110kw 980r/min

380V

2536.98.8m^3/min 445.07m

1 56 3mm

DT300/6 780KW

BH-40-2.5 2 JSG9-K

1.5.4

1

0.5m

2

80m^3 3 D12-25 7

Q_e=12.5 m^3/h H_e=175m

YB2160M2-2 15KW 660V

56 3mm 2

3 D12-25 7

2503 BQWJ15-50-5.5

2503 2503

2503 2503

1.5.5

35kV 10kV (913 923

) 3.5km

1

1 10kV 10kV

10kV XGN2-12 18 VS1-12

220V CT19A

10k 10kV 6

2 2 2

380V GGD2 6

S9-400/10 400kVA 10/0.4kV

2 10kV

380V 380V

2

1

10kV 10kV

2 $MYJV_{22}$-3 95

PJG47-200/10 PJG47-100/10 PJG47-50/10

9 KBSGZY-400/10R KBSGZY-200/10R

KBZ 8

40kW QBZ-80 120 N /660

40kW QBJ D -30 60 N /660

2

8 PJG-200/10Y 5

KJZ-400/600 1 KBSG

3

2503

KBSGZY--1000

1000kV A 10kV 1140v

400 Kv A

660v

2506 1140V

KBSGZY-400/10R 660V

KJZ-400(5 660V

2504 501 KBSGZY-400/10/0.66

1.5.6

EEB-75A

55KW 10.1 m^3/mim 0.8MPa 380V

2970rpm MLGF-10/7-55G 10m^3/mim

0.7MPa 380V 2970rpm

100 4mm

1.5.7

1 KJ110N 1 2 1

1 JF-F8 5

2 LFT 1 2

1 1 BFDZ-21 4

18 JHWK 164

3

1 JSQ-31-512 1 256

MHYVP-20 2 0.8

KTH3

15

2 HTL109 1 KTW13

10 1

KTW14 150

4

5

EEB-75A

55KW 10.1 m^3/mim 0.8MPa 380V

2970rpm MLGF-10/7-55G $10m^3$/mim

0.7MPa 380V 2970rpm

100 4mm

100 1 50m

ZYJ

6 $400m^3$ DN100

DN50

100m

50m 50m ZYJ

2

2.1

2.1.1

PHA FTA

ETA

PHA

1

20 20

2

3 PHA

Preliminary Hazard Analysis PHA

2.1-1

2.1-1

(1)

(2)

(3)

(4)

2.1-2

2.1-2

1	
2	
3	
4	

2

3

(1)

(2)

2.2

2.2.1

CH_4 CO CO_2

H_2S

2012 6

0.984 m^3/min

0.510 m^3/t 0.738m^3/min 0.340m^3/t

2.2-1

2.2-1

	16%		CO
	5%~16%		CO

1

(1)

5% ~16% 9.5%

(2)

650℃~750℃

(3) 12%

2

(1)

(2)

(3)

3

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

4

(1)

(2)

(3)

(4)

5

(1)

(2)

2.2-2

2.2-2

1						

2						100%
3						2 3 100%
4			6m			
5			20m			

2.2.2

1

(1)

(2)

(3)

4-1 5-1

8.2 31.7MPa

0.6 24.0MPa

(4)

2.2.3

2.2-3

2.2-3

(

)

1

3

(1)

(2)

(3)

2

(1)

(2)

(3)

(4)

(5)

3

(1)

(2)

(3)

(4) 3

4

(1)

(2)

CO

(3)

2.2-4

2.2-4

1						80m 50m
2						20m
3						

4						
5						

2.2.4

1

(1)

(2)

(3)

(4)

2

2.2.5

30 50g/m^3 1000 2000g/m^3

300 400g/m^3

(1) 2000

(2)

10 30m

1.9MPa

610 1800m/s

2000m/s

(3)

8%

2.2-5

2.2-5

1						
2						
3						

2.2.6

1

(1)

(2)

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(9)

(10)

(11)

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(1)

(2)

(3)

(4)

(5)

(6)

(7)

2.2.7

1

1

2

3

4

5

6

7

8

9

10

2

1

2

3

4

5

3

1

2

3

4

5

6

2.2.8

2.2.9

2.2-6

2.2-6

	1. 2. 3. 4. 5. 6.		1. 2.

2.2.10

1

2

3

2.2.11

2.3

1

[2004]56

(1)

(2)

(3)

(4)

(5) 6

(6)

2

5 5

3 5

2.4

2.4-1

2.4-1

1			
2			
3			
4			
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7			
8			
9			
10			
11			
12			

3

3.1

3.1.1

3.1.2

1

2

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4

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6

7

3.2

3.2.1

1			150000000003196 2014 6 18
2			C150000200908112003063 2 2016 7 29
3			201527280493 2023 7 26
4			MK [2012]K125 2014 6 18
5			MK150201140040 2017 4 29
			A150201140308 2017 4 29

3.2.2

3.2.3

2014 2

20 8

3.2.4

3.2.5

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46

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3

1 34

2 12

3 12

4

21

5 5

6

4

3.2.6

2014

1

2

3.2.7

3.2-1

3.2-1

1				MK150201140040	2017 4 29
				A150201140308	2017 4 29
2					
3				MK151003132	2016 5 30
				B150201112557	2016 5 29
4				MK151003390	2016 6 30
				B150201113296	2016 6 29
5					

2 8 2 8

4 3 3 8 5

6 7 2 3

11 2 18 2

2 4

3.2.8

180 140 20

20 58

[2007]290

3.2.9

3.2.10

3.2.11

MA

3.3

1

2

3.3-1

3.3-1

	1		
	2		
	1		

	1		
	2		
	3		
	4		
	2		
	3 [2012]16		
	4		
	5	7	
	6		
	1		

	2		
	3		
	4		
	1		
	2		
	3		

3.4

3.4.1

1

(1)

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(4)

(5)

2

3

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(3)

(4)

4

5

6

3.4.2

3.4.3

3.4.4

[2012]16

2014 900.26

1

2

3

4

5

4

1

2

3

4

5

4.1

4.1.1

4.1-1

4.1-1

2		
3		
4		
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7		
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9		
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11		
12		
13		

4.1.2

[2004] 8

[2004] 397

SCA

4.2

4.2.1

1

5-1

1

+1276.3 10 180m

3.4m 3.2m 9.61m^2 1000mm

2

+1276.3m 6 86m

3.6m 3.4m 11.53m^2

3

+1276.3m 10 51m

3.0m 2.9m 7.71m^2

1-2-1

4

6.72m^2

10.75m^2

8.36m^2

2

+1267.7m

3

5-1

4-1

4

3.4m 3.0m

10.2m^2 11.2m^2

25m

5

2503

MG2 125/580 WD 1 SGZ764/400
1 ZY5200/11/24 100 ZYG5200/15/30 4
. SZZ764/160 1 DSJ100/63/2 75
1 . PLM1000 1000 , 110kW.JH-20A 1
BRM315/31.5 2 JH-20A 2 BH-40-2.5
1

20m

2503 3.6m 2.3m 2503
3.6m 2.3m
16mm 1600mm 15.24mm 6.0m
2503 2502
20m

6

2506 EBJ-160
SDJ-800/40 2 2 MQT-130J-A KHYD50
FBD 6.0/2 15

900mm 900mm, 16mm
L=1600mm HLBY-2

2504 EBJ-160
SPJ-80 ZM-1.2 QSK-32-7.5 FBD 6.0/2
15

800mm 800mm 16mm L=1600mm
HLBY-2

7

1 20m

2 30m

3 20m

4 30m

8

40m

4.2.2

4.2-1

4.2-1

1	30m 80° 8m	30m	
2		2	
3			
1	2m		
2	20m 1.8m 1.6m	2.3m	
3			
1		2506 2504	

2			
3			
4			
5			
6			
7			
8			
9			
10			
1			
2			
3			
4			
5	20m 1.6m 1.8m		
6			
7			
8			
9	3m	1.8m	
10	( )		
11			
12			
14			
15			
16			

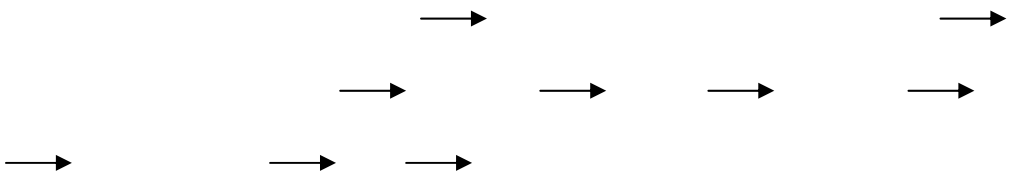
4.3

4.3.1

FBCZ-6- 19 2

110kw 980r/min 400

1200Pa 31.5 75m^3/min 10min



2536.98.8m^3/min 445.07m^3/min

2091.91m^3/min 2734.8m^3/min 960Pa 1.8m^2

U

FBD- 6.0/2X15

600mm

“ ” “ ”

1

2

4.3-1

			mm	(m)	/	
502 1#	2011.2.22		500	1.6 1.2	4/2	
2#	2011.11.2		500	1.6 1.2	4/2	
3#	2011.11.4		500	1.8 1.8	4/2	

2503	2013.3.15		500	1.6 1.2	4/2	
	2011.9.28		380	7 3 2.2	1/1	
2503	2013.3.5		380	7 3 2.2	1/1	
3#	2011.11.4		380	7 3 2.2	1/1	
2506	2013.12.6		380	7 3 2.2	1/1	

3

2013 9 15 2266m^3/min

1390m^3/min 61.34%

4

2014 3 28

1.8m^2

5

3

3

6

7

4.3.2

60 t/a

4.3-2

4.3-2

1		2	
2			
3			
4			
5		2	
6			
7			
8			
9			
10			
11		3 2	
12			

13			
14			

4.4

4.4.1

2012 6

0.984 m^3/min

0.510 m^3/t 0.738m^3/min 0.340m^3/t

1

2

3

4

KJ110N 1 2 JF-F8

6

16 16 10 12

25 3 8 16 4 4

5

8 AQC-1A CJG10 GQJ-1B

41 JCB4 CJC4 4 CJYB4/25

4 CTB1000X

ZYX45 110

4.4.2

4.4-1

4.4-1

	1			
	2	5m		
	3			

	1			
	2			
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			

4.5

4.5.1

1

2014 4

AQ1045-2007

GB/T20104-2006

2

400m^3 108 4mm

50m

100m

3

4

2503 2 50m

2503

2503 2 50m

2503

50m

3m 30m

3

4.5-1

				( )		
	12	80	66	5280	35	2011.11.16
	10	80	60	4800	35	2011.11.17
				4800	35	2011.11.17
				2280	30	2011.11.19
				4320	30	2011.11.20

4.5.2

4.5-2

4.5-2

1			
2			
3			

4

1 56 3mm

DT300/6 780KW

BH-40-2.5 2

15%--20%

4

JSG9-K

24

5

(1)

(2)

(3)

(4)

(5)

4.6.2

4.6-1

4.6-1

1			
2			
3			
4		400m^3	
5			
6			
7			
8			
9			
10			
11			
12			
13	20m	20m	
14			
15			

4.7

4.7.1

DTL100/63/2 160

2 1000mm 2.5m/s 630t/h 2×160kW

1140V

DSJ100/70/2 125

DSJ100/63/2 75 1

KXJZ111

2503 2503

2506 2506

2 WC1.8J 2

CZB1_242

2503 2503

2506

2506

4.7.2

[M·A]

4.7-1

4.7-1

1			DTL100/63/2 160	
2				
3		2 3		
4		Ü		
5				

6

8		2 0.2m 50m 25m		
9		30m		
10				
11				
12				

4.8

4.8.1

35kV 10kV (913 923
) 3.5km

1

1 10kV 10kV

10kV XGN2-12 18 VS1-12

220V CT19A

10k 10kV 6

2 2 2

380V GGD2 6

S9-400/10 400kVA 10/0.4kV

2 10kV

380V 380V

2

1

10kV 10kV

2 $MYJV_{22}$-3 95

PJG47-200/10 PJG47-100/10 PJG47-50/10

9 KBSGZY-400/10R KBSGZY-200/10R

KBZ 8

40kW QBZ-80 120 N /660

40kW QBJ D -30 60 N /660

2

8 PJG-200/10Y,5

KJZ-400/600 1 KBSG

3

2503

KBSGZY--1000

1000kV A 10kV 1140v

400 Kv A

660v

2506 1140V

KBSGZY-400/10R 660V

KJZ-400(5 660V

2504 501 KBSGZY-400/10/0.66

KBZ

QBJ QBZ

ZBZ MY

0.5m

127V

KL4LM(A) 50 JIEBELL 40 KL5LM(A) 40

130

4.8.2

[MA]

4.8-1

4.8-1

1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

4.9

4.9.1

1

+1276.3

0.5m

2

80m^3 3 D12-25 7

Q_e=12.5 m^3/h H_e=175m

YB2160M2-2 15KW 660V

56 3mm 2

3 D12-25 7

2503 BQWJ15-50-5.5

2503 2503

2503 2503

3

KHYD/50 1

4

[2014]3

4.9.2

0.5m

4.9-1

4.9-1

1			
2		1 1 1 3 1 1 1 2	

3			
4			
5			
6			
7			
8			
9			
10			
11			
12			

4.10

4.10.1

4.10.2

4.10-1

4.10-1

1				
2				
3				

4.11

4.11.1

40km

30min

6

10

4.11.2

4.12

2013 4

4.13

4.13.1

1

KJ110N 2

1 1 JF-F8 5 KJ110N

KJ110N

16 16 10 12

25 3 8 16 4

4

12

2

LFT 1 2 1 1

BFDZ-21 4

18 JHWK 164

LED

3

4

EEB-75A

55KW 10.1 m^3/mim 0.8MPa 380V

2970rpm MLGF-10/7-55G $10m^3$/mim

0.7MPa 380V 2970rpm

100 4mm

100m 1

5

$400m^3$

DN100 DN50

100m

50m 50m

ZYJ

6

1 JSQ-31-512 1 256

MHYVP-20 2 0.8

KTH3

15

2 HTL109 1 KTW13

10 1

KTW14 150

4.13.2

4.13-1

4.13-1

1				
2				
3		AQ1048-2007		
		AQ6210-2007	LFT	
			18	
4		30min	ZYX45	
		, 2		

		500m 500m 1000m		
		96h		
5				
6				
7				
8		MT390-1995		
		200m	100m	
		25 40m 5 8	---	---

5

5.1

5.1.1

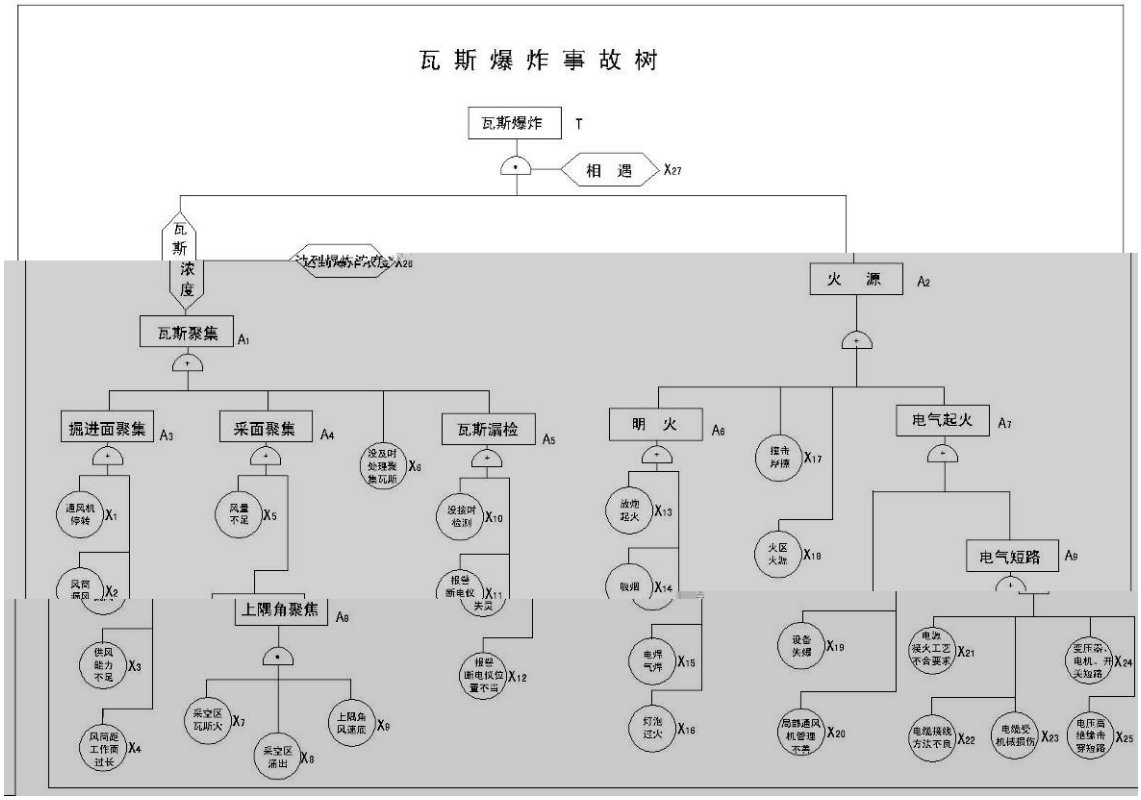
5.1-1

5.1-1

	1. 2. 3. 4.			1. 2. 3. 4.
	1. 2. 3.	1. 2.		1. 2. 3.

	1. 2. 3. 4. 5. 6.	1. 20m 2.		1. 20m 2. 3. 4.

5.1-1



5.1-1

1

T 26 27A_1A_2

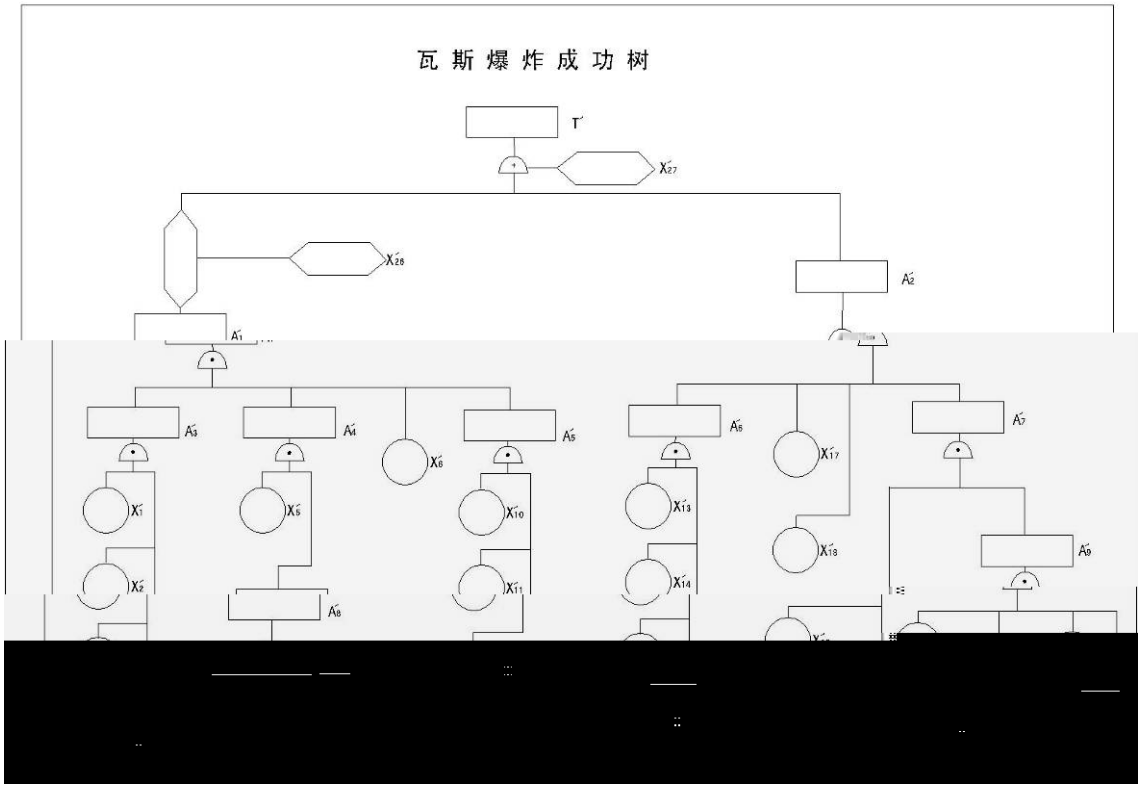
26 27 A_3 A_4 6 A_5 A_2

26 27 1 2 3 4 5 7 8 9 6 10 11 12 A_2

130

2

5.1-2



5.1-2

T 26 27 A 1 A 2 A 3A 4 6A 5 A 6 17 A 7 18 + 26 27

= 1 2 3 4 5 (7+ 8+ 9) 6 10 11 12 + 13 14 15 16 17{

19(21 22 23 24 25 20 18 26 27)}

6

P_1 26 P_2 27

P_3 1 2 3 4 5 6 7 10 11 12

P_4 1 2 3 4 5 6 8 10 11 12

P_5 1 2 3 4 5 6 9 10 11 12

P_6 13 14 15 16 17 18 19 20 21 22 23 24 25

3

I_{26} I_{27} I_{1} I_{2} I_{3} I_{4} I_{5} I_{6} I_{10} I_{11} I_{12} I_{13}
I_{14} I_{15} I_{16} I_{17} I_{18} I_{19} $=I_{20}$ I_{21} I_{22} I_{23} I_{24}
I_{25} I_{7} I_{8} I_{9}

4

(1) 80%

1 A3

20%

(2) 130

130

(3)

26 27

1 2 3 4 5 6 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 7 8 9

P_3 1 2 3

4 5 6

7 10 11

12

P_4 (P_3)

P_5 (P_3)

P_6 13 14 15 16 17 18 19 20 21 22 23 24 25

P_6

5.1.2

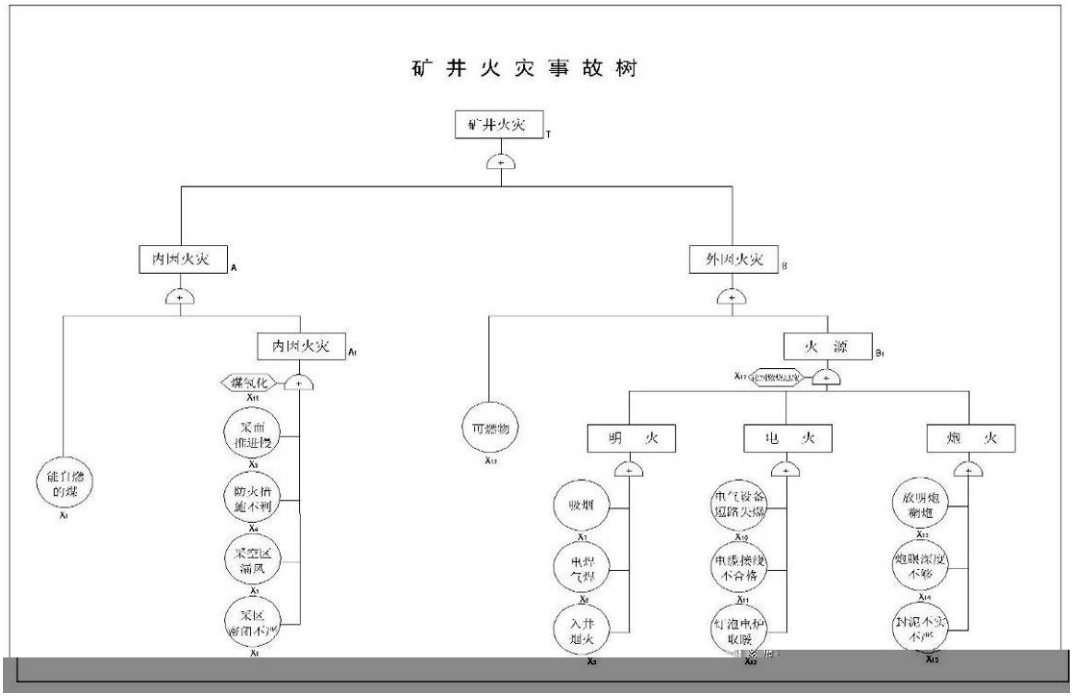
5.1-2

5.1-2

	1. 2. 3. 4. 5. 6.	1. 2. 3.		1. 2. 3. 4. 5. 6.

1

5.1-3



5.1-3

2

(1)

T A B $_1A_1$ 16 $_2B_1$ 17

1 16 3 4 5 6 2 17 7 8 9 10 11 12 13 14 15

1 16 3 1 16 4 1 16 5 1 16 6 2 17 7 2 17 8 2 17 9 2 17 10

2 17 11 2 17 12 2 17 13 2 17 14 2 17 15

13

(2)

T A B 1 A_1 16 2 B_1 17

1 3 4 5 6 16 2 7 8 9 10 11 12 13 14 15 17

1 2 1 7 8 9 10 11 12 13 14 15 1 17 2 3 4 5 6

2 16 3 4 5 6 7 8 9 10 11 12 13 14 15 7 8 9 10 11

12 13 14 15 16 3 4 5 6 17 16 17

9

P_1 1 2

P_2 1 7 8 9 10 11 12 13 14 15

P_3 1 17

P_4 2 3 4 5 6

P_5 3 4 5 6 7 8 9 10 11 12 13 14 15

P_6 3 4 5 6 17

P_7 16 2

P_8 16 7 8 9 10 11 12 13 14 15

P_9 16 17

(3)

2 17 1 16 3 4 5 6 7 8 9 10 11 12 13 14 15

5.1.3

5.1-3

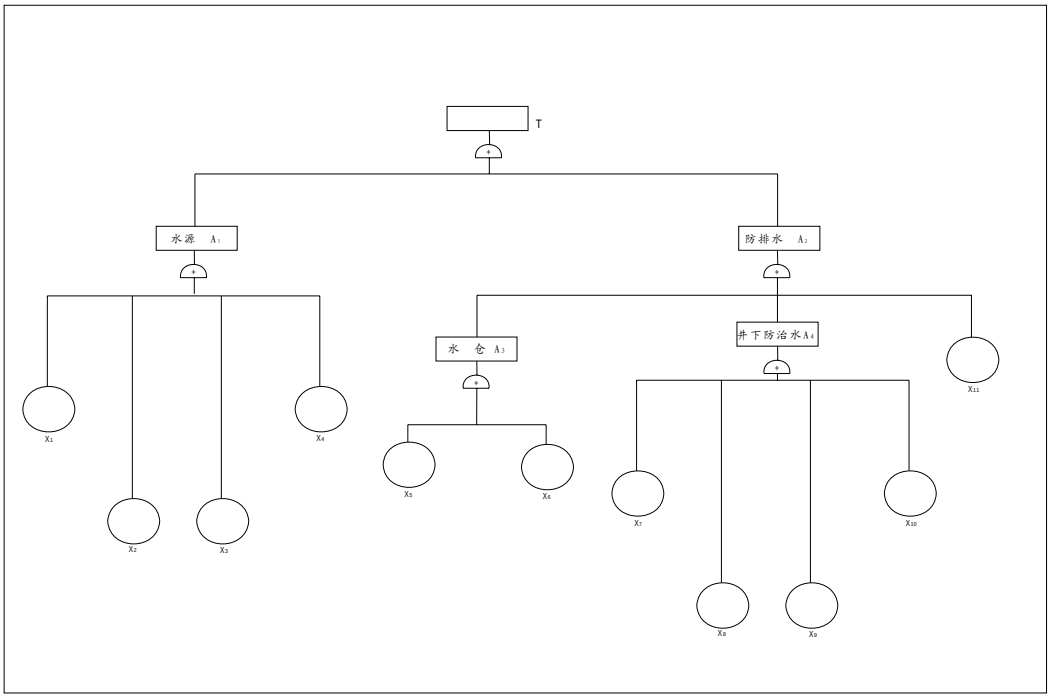
5.1-3

	1. 2. 3. 4. 5.	 1 2. 3.		1. 2. 3. 4. 5
	1. 2.	1. 2. 3.		1. 2. 3.

	1. 2. 3. 4.	1. 2. 3. 4.		1 2. 3. 4 5 6
	1. 2. 3.	1. 2		1. 2. 3.

1

5.1-4



5.1-4

2

(1)

T A_1A_2

1 2 3 4 5 6 7 8 9 10 11

1 5 1 6 1 7 1 8 1 9 1 10 1 11 2 5 2 6 2 7 2 8 2 9

2 10 2 11 3 5 3 6 3 7 3 8 3 9 3 10 3 11 4 5 4 6 4 7

4 8 4 9 4 10 4 11

28

(2)

T A_1 A_2

1 2 3 4 A_3 A_4 11

1 2 3 4 5 6 7 8 9 10 11

2

P_1 1 2 3 4

P_2 5 6 7 8 9 10 11

28 2

(3)

1 2 3 4 A_1 I_1 I_2 I_3 I_4 5 6 7 8 9 10 11 A_2

I_5 I_6 I_7 I_8 I_9 I_{10} I_{11} 1 2 3 4

5 6 7 8 9 10 11 I_1 I_2

I_3 I_4 I_5 I_6 I_7 I_8 I_9 I_{10} I_{11}

x_1 x_2 x_3 x_4

5.1.4

1

(1)

PHA

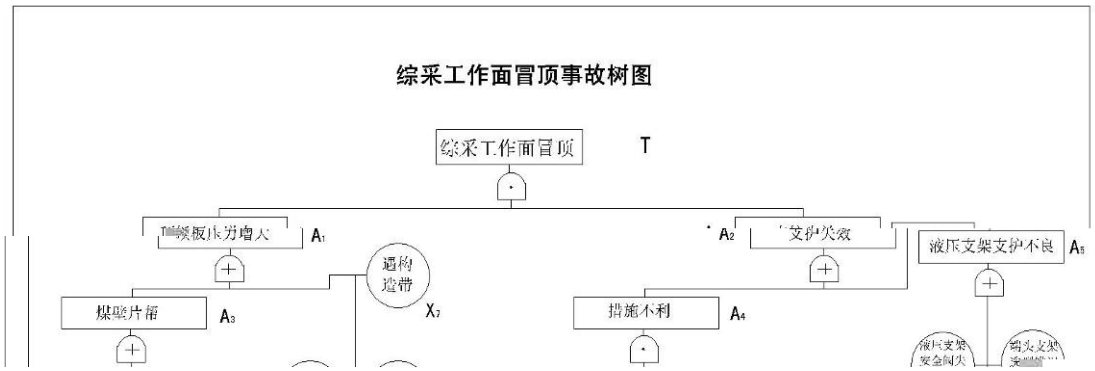
5.1-4

5.1-4 **PHA**

	1. 2. 3. 4. 5. 6.	1. 2.		1. 2. 3. 4. 5.
	1. 2. 3. 4.	1. 2.		1. 2. 3.

(2)

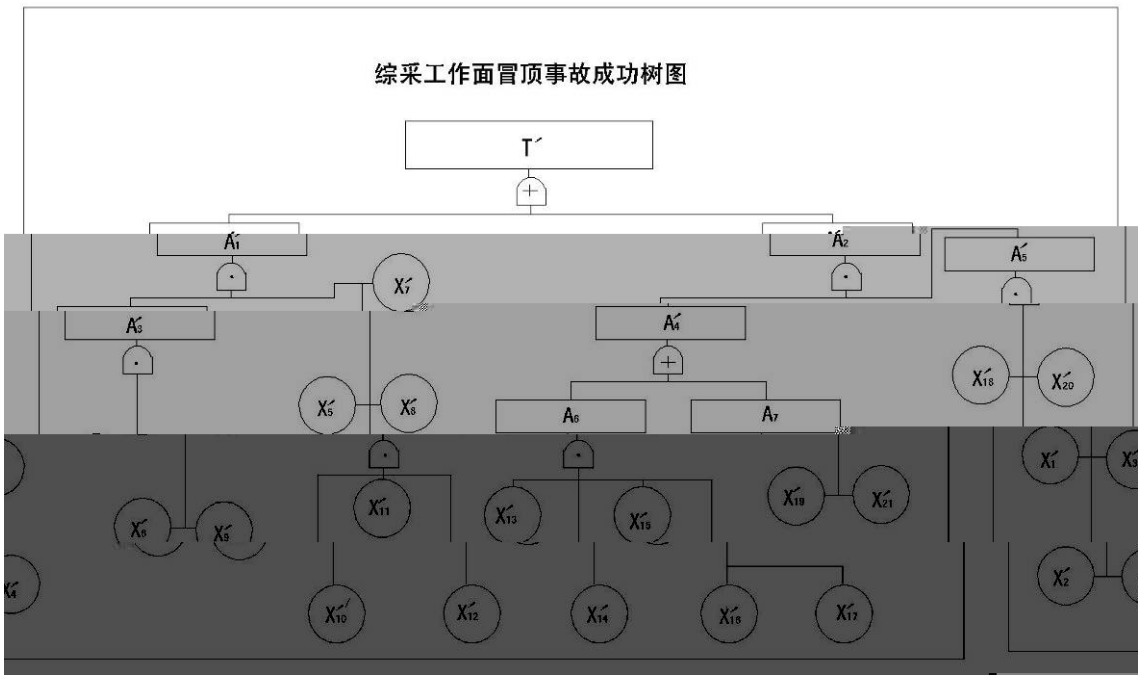
5.1-5



5.1-5

171 3

5.1-6



5.1-6

$$
\begin{aligned}
T' &= A_1' + A_2' \\
&= X_3' X_5' X_6' X_7' X_8' X_9' + A_4' A_5' \\
&= X_1' X_2' X_3' X_4' X_5' X_6' X_7' X_8' X_9' + (A_6' + A_7') X_{18}' X_{19}' X_{20}' X_{21}' \\
&= X_1' X_2' X_3' X_4' X_5' X_6' X_7' X_8' X_9' + (X_{10}' X_{11}' X_{12}' \\
&+ X_{13}' X_{14}' X_{15}' X_{16}' X_{17}') X_{18}' X_{19}' X_{20}' X_{21}' \\
&= X_1' X_2' X_3' X_4' X_5' X_6' X_7' X_8' X_9' + X_{10}' X_{11}' X_{12}' X_{18}' X_{19}' X_{20}' X_{21}' \\
&+ X_{13}' X_{14}' X_{15}' X_{16}' X_{17}' X_{18}' X_{19}' X_{20}' X_{21}'
\end{aligned}
$$

3

$I_\phi(18) = I_\phi(19) = I_\phi(20) = I_\phi(21)$

$\rangle I_\phi(10) = I_\phi(11) = I_\phi(12)$

$\rangle I_\phi(1) = I_\phi(2) = I_\phi(3) = I_\phi(4) = I_\phi(5) = I_\phi(6) = I_\phi(7) = I_\phi(8)$

$= I_\phi(9) = I_\phi(13) = I_\phi(14) = I_\phi(15) = I_\phi(16) = I_\phi(17)$

(3)

171

171

3

3

3 P2 X18 X19

X20 X21 P2

P2

(4)

2

(1)

PHA

5.1-5

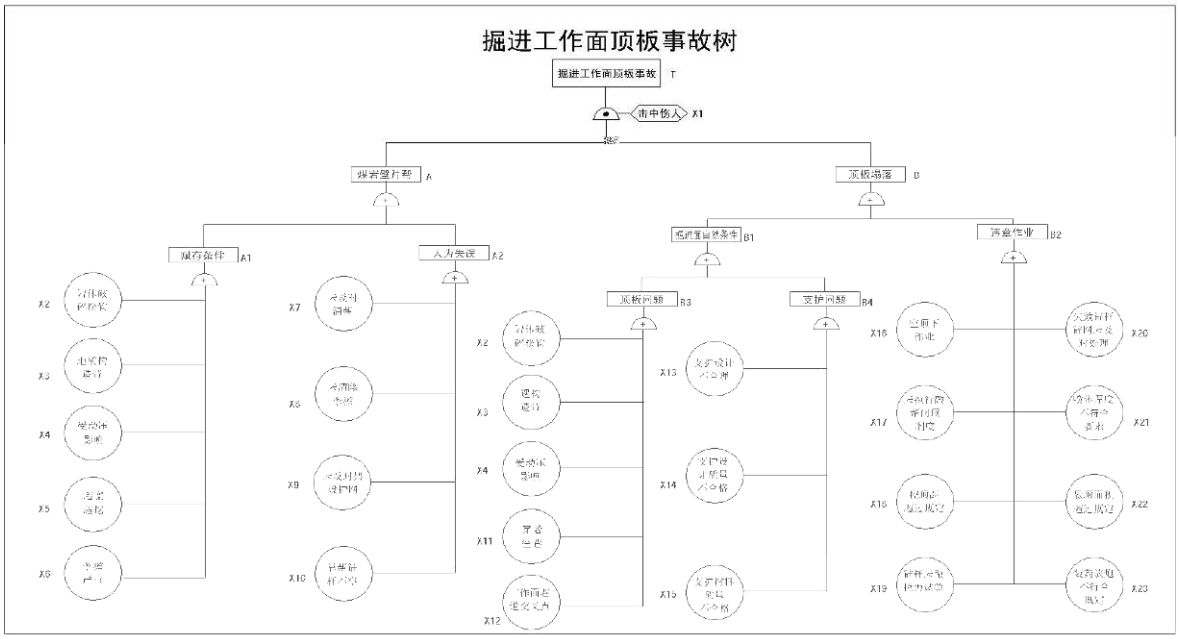
5.1-5

			III	1. 2. 3.

			Ⅲ Ⅳ	
	1. 2. 3.		Ⅲ Ⅳ	1. 2. 3. 4. 5.
	1. 2. 3. 4. 5	1. 2.	Ⅲ Ⅳ	 1. 2. 3.

(2)

5.1-7



5.1-7

A.

T 1 A B

1 A_1A_2 B_1 B_2

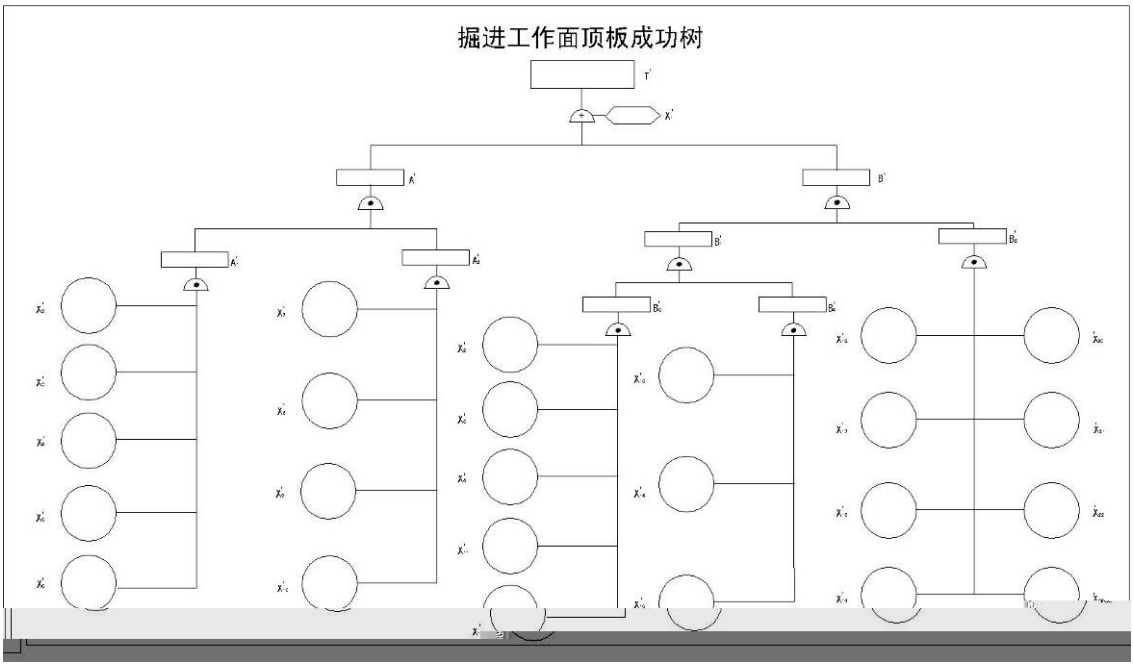
1 2 3 4 5 6 7 8 9 10 2 3 4 11 12 13 14

15 16 17 18 19 20 21 22 23

84

B.

5.1-8



5.1-8

T _1 A B

_1 A_1 B_2 B_1 B_2

1 2 3 4 5 6 7 8 9 10 2 3 4 11 12 13 14 15

16 17 18 19 20 21 22 23

1 2 3 4 5 6 2 3 4 11 12 13 14 15 2 3 4 5 6 16 17 18 19 20 21 22 23

7 8 9 10 2 3 4 11 12 13 14 15 7 8 9 10 16 17 18 19 20 21 22 23

5

P_1 1

P_2 2 3 4 5 6 11 12 13 14 15

P_3 2 3 4 5 6 16 17 18 19 20 21 22 23

P_4 7 8 9 10 2 3 4 11 12 13 14 15

P_5 7 8 9 10 16 17 18 19 20 21 22 23

84 5

C.

1 1

$I_1 \times 1/2^{n-1}$

I_2 $1/2^{10-1}$ $1/2^{13-1}$ 0.002179

I_2 I_3 I_4 I_5 I_6

I_7 $1/2^{12-1}$ $1/2^{12-1}$ 0.000977

I_7 I_8 I_9 I_{10}

I_{11} $1/2^{10-1}$ $1/2^{12-1}$ 0.00244

I_{11} I_{12} I_{13} I_{14} I_{15}

I_{16} $1/2^{13-1}$ $1/2^{12-1}$ 0.000732

I_{16} I_{17} I_{18} I_{19} I_{20} I_{21} I_{22} I_{23}

I_{11} I_2 I_7 I_{16}

I_1 I_{11} I_{12} I_{13} I_{14} I_{15} I_2 I_3 I_4 I_5 I_6 I_7 I_8 I_9 I_{10} I_{16} I_{17} I_{18} I_{19} I_{20} I_{21} I_{22} I_{23}

D.

84 84

4

1

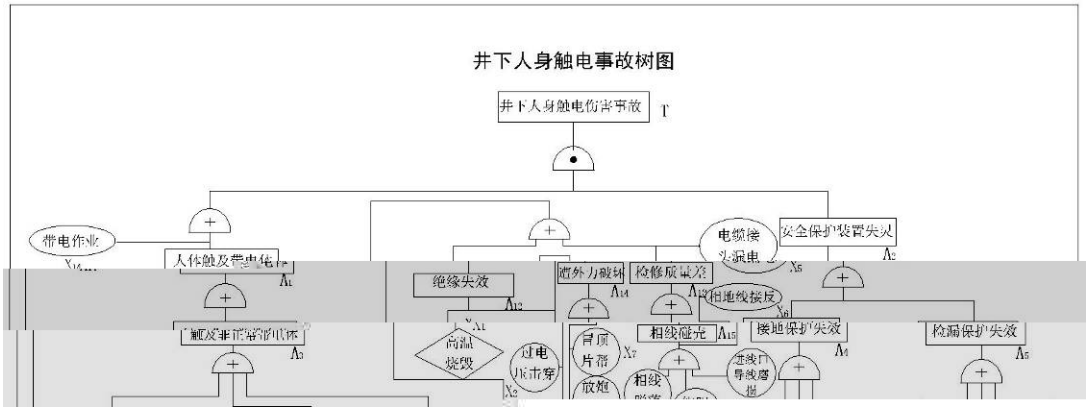
5.1.5

1

PHA

5.1-6

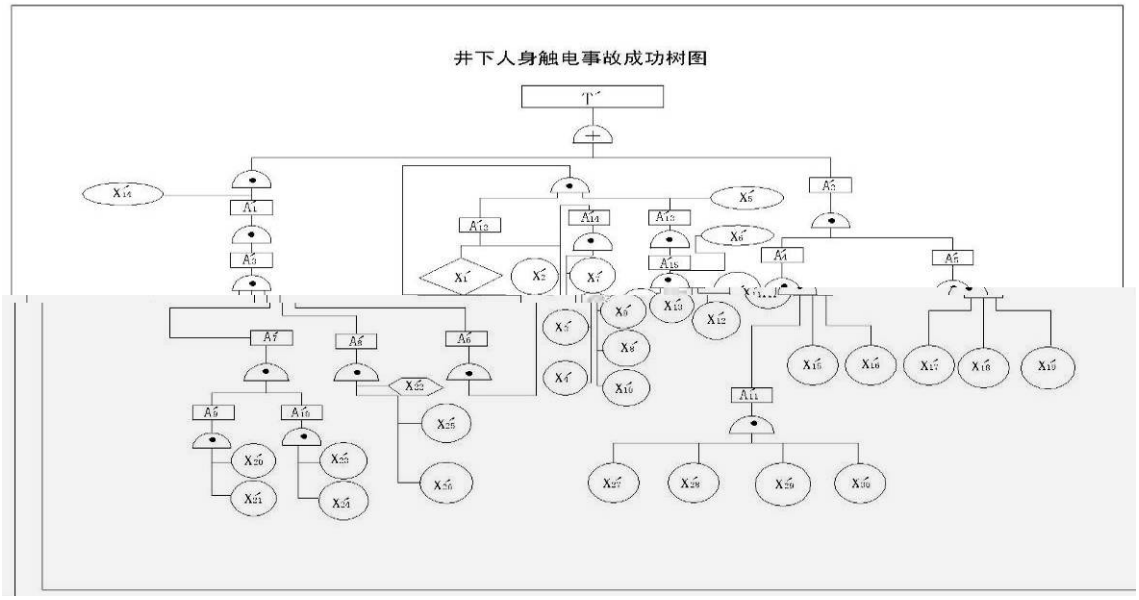
5.1-6



5.1-9

(1)

5.1-10



5.1-10

$$T' = A_1' + A_2' = A_3' X_{14}' + A_4' A_5' = A_6' A_7' A_8' X_{14}' + A_{11}' X_{15}' X_{16}' X_{17}' X_{18}' X_{19}'$$
$$= A_{12}' A_{13}' X_5' A_9' A_{10}' X_{22}' X_{25}' X_{26}' X_{14}' + X_{15}' X_{16}' X_{17}' X_{18}' X_{19}' X_{27}' X_{28}' X_{29}' X_{30}'$$
$$= X_1' X_2' X_3' X_4' A_{14}' A_{15}' X_5' X_6' X_9' X_{10}' X_{20}' X_{21}' (X_{23}' + X_{24}') X_{22}' X_{25}' X_{26}' X_{14}'$$
$$+ X_{15}' X_{16}' X_{17}' X_{18}' X_{19}' X_{27}' X_{28}' X_{29}' X_{30}'$$

$$= X_1' X_2' X_3' X_4' X_5' X_6' X_7' X_8' X_9' X_{10}' X_{11}' X_{12}' X_{13}' X_{14}' X_{20}' X_{21}' X_{22}' X_{23}' X_{25}' X_{26}'$$
$$+ X_1' X_2' X_3' X_4' X_5' X_6' X_7' X_8' X_9' X_{10}' X_{11}' X_{12}' X_{13}' X_{14}' X_{20}' X_{21}' X_{22}' X_{24}' X_{25}' X_{26}'$$
$$+ X_{15}' X_{16}' X_{17}' X_{18}' X_{19}' X_{27}' X_{28}' X_{29}' X_{30}'$$

3

$$P_1 = \{X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{20}, X_{21}, X_{22}, X_{23}, X_{25}, X_{26}\}$$
$$P_2 = \{X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{20}, X_{21}, X_{22}, X_{24}, X_{25}, X_{26}\}$$
$$P_3 = \{X_{15}, X_{16}, X_{17}, X_{18}, X_{19}, X_{27}, X_{28}, X_{29}, X_{30}\}$$

(2)

$$I_\phi(15) = I_\phi(16) = I_\phi(17) = I_\phi(18) = I_\phi(19) = I_\phi(27) = I_\phi(28) = I_\phi(29) = I_\phi(30)$$
$$\rangle I_\phi(1) = I_\phi(2) = I_\phi(3) = I_\phi(4) = I_\phi(5) = I_\phi(6) = I_\phi(7) = I_\phi(8) = I_\phi(9) = I_\phi(10)$$
$$= I_\phi(11) = I_\phi(12) = I_\phi(13) = I_\phi(14) = I_\phi(20) = I_\phi(21) = I_\phi(22) = I_\phi(25) = I_\phi(26)$$
$$\rangle I_\phi(23) = I_\phi(24)$$

(3)

171

171

3

3

3 P_3 P_3

P_3

A.

2

B.

5.1.6

( )

1 PHA

PHA

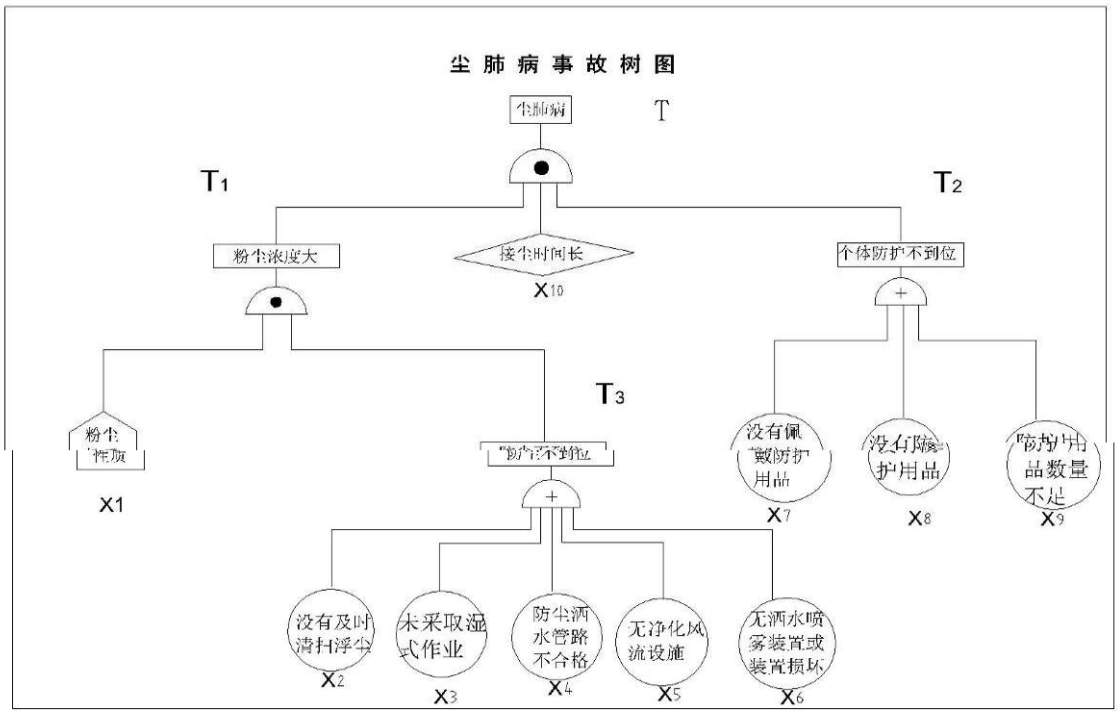
5.1-7

5.1-7

			~	

2

5.1-11

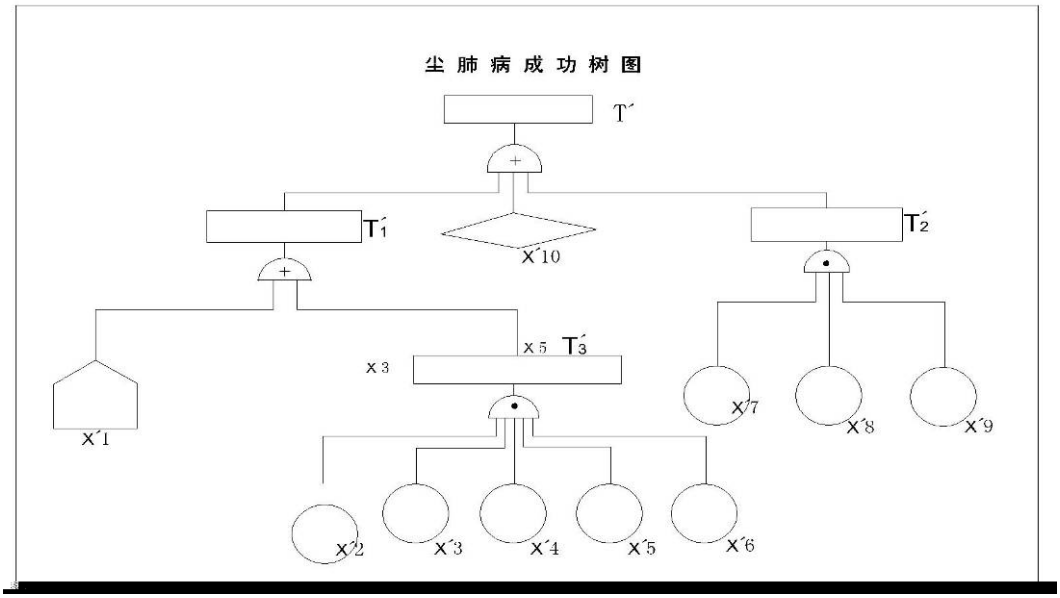


5.1-11

15 4

(1)

5.1-12



5.1-12

$$T' = A_1' + A_2' + X_{10}'$$
$$= A_3' + X_1' + X_7' X_8' X_9' + X_{10}'$$
$$= X_2' X_3' X_4' X_5' X_6' + X_1' + X_7' X_8' X_9' + X_{10}'$$

4

$$P_1 = \{X_1\}$$
$$P_2 = \{X_2, X_3, X_4, X_5, X_6\}$$
$$P_3 = \{X_7, X_8, X_9\}$$
$$P_4 = \{X_{10}\}$$

(2)

$$I_\phi(1) = I_\phi(10) \rangle I_\phi(7) = I_\phi(8) = I_\phi(9) \rangle I_\phi(2) = I_\phi(3) = I_\phi(4) = I_\phi(5) = I_\phi(6)$$

(3)

15

15

4

4

4 P1 P4 1

P3

P3

P3

5.2

1

(1) -

(2)

(3) -

2

-

3

(1) -

(2)

(3) -

(4) -

4

(1) -

(2) -

(3)

(4) -

(5) -

(6) -

5

(1) -

(2)

6

(1) II

(2) III

5.3

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6.1

6.1.1 2011 1 2012 2

1 2011 1 25 12

120

2 2011 3 10 18 30

1 2

3 2011 3 25

1209 7 30

4 2011 5 3 8 40 ,

, 50

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,5 3 11 ,

5 2011 5 7

50

1 5 30

6 2011 5 9 19 15 16

1

7 2011 5 11 21 25

133-138

12 1 04 12 8 30

13 20 20

8 2011 5 26

9 2011 5 27 17

10 2011 5 31 11 50

12107

12107 5

13 05

11 2011 6 2 10 20

+210

12 2011 6 12 21

13 2011 6 17 0 20

14 1 13

1570

6 8

14 2011 6 23 02 402

15 2011 6 30 22 0

6

16 2011 7 12 14 12 22113

3 2

17 2011 7 31 4 30

3103

18 2011 8 5 2 20 532

86

19 2011 8 6 23 40

36

36

36

20 2011 8 7 17 20

1177 1177 1155

17 23 18 17

19 30

21 8 19 16 30 16

3300 67 1601 3 6

58 10 6

6 6

22 2011 9 7 18 50

2 1

20 25

23 2011 9 20 7 0

1310 110

8 20 9 7

24 2011 9 29 11 40

29 13 40

25 2011 10 29 12 10

26 2011 11 17 , 1295

102 20

14

27 2011 11 18 3 2

7 4

1 12 7

5

28 2012 2 3 7 30

10 50

29 2012 2 8 22 17

,

6.1.2

1

2011 1 -2012 2 29 49

15

2

1 2 10 15 9 15

2 2 4 4 1 6 1 3

3

1	11.1%	2	4.08%
10	22.2%	15	30.61%
9	44.4%	15	30.61%
2	11.1%	2	4.08%
1	5.56%	6	12.24%
1	5.56%	6	12.24%
1	5.56%	3	6.12%

6.2

1995 50

6.3

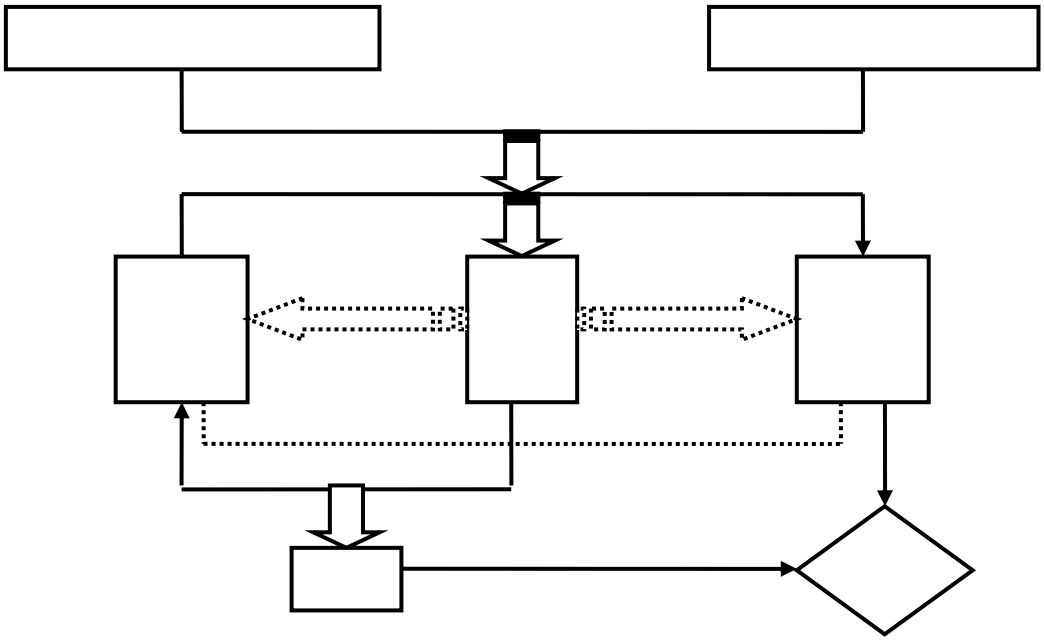
6.3.1

6.3-1

“ ”

“ ”

“ ”



6.3-1

“

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6.3.2

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7

7.1

1	2503		
2			AQ1029-2007
3			
4			8
5			
6			
7			
8			
9		$10m^3$	80
10	10KV		
11	2503		
12	2504		
13			
14			

15

7.2

7.2.1

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33

7.2.2

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3

4 30MPa

5

6

7

600×600mm

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9

10

7.2.3

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5

7.2.6

1 215

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8

9

10 226

11

12

13

100m

14

15

16

17

7.2.7

1

2

159

3

7.2.8

1

2

3

4

5

6 50

7

8

9

10 5km/h

11

12

13

14

15

16

(1)

(2)

(3)

(4)

(5)

17

18

19

7.2.9

1

2

3

7.2.10

1

2

3

4

5 4#

7.2.11

1

2

7.2.12

1

2

3

7.2.13

7.2.14

1

2

3

4

5

7.2.15

1

(1)

(2)

(3) GB5749

2

(1)

(2)

(3)

(4)

90dB (A)

90dB (A)

8

1

2

3

4

5

7

8 30m

9

10

11

12

13

14

15

16

17

60