检索号	QQHP-2022-027
商密级别	普通商密

1			
2		P1	
3		P1 ~ 现状检测报告、类比检测报告	
4			
5		专题	

202 年 月

1

2

	200 540MW/1080MWh		
	/		
	/		/
	220kV	/	
	55-161	m^2 / km	48961m^2 42440m^2 6521m^2
	☑		☑
/		/	/
	/		/
%	/		9
	☑		
	HJ24-2020		
	“		”

	1. 1 “ ”　6.88km　5 2 TSP 220kV 4000V/m GB3096-2008　2 3 4 220kV　2019 <　2012　>　< 2012　>　2012　98 “　” 5　“　”

“ ”

“ ”

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“ ”

7

HJ 19-2022

“ ”

2

“

” “ ”

220kV

1.1

1

2

λ Ł

	4		

2015

30.5782 27.7027

14.4022
10.3212
14.4022
10.3212
2.0117

16.4139

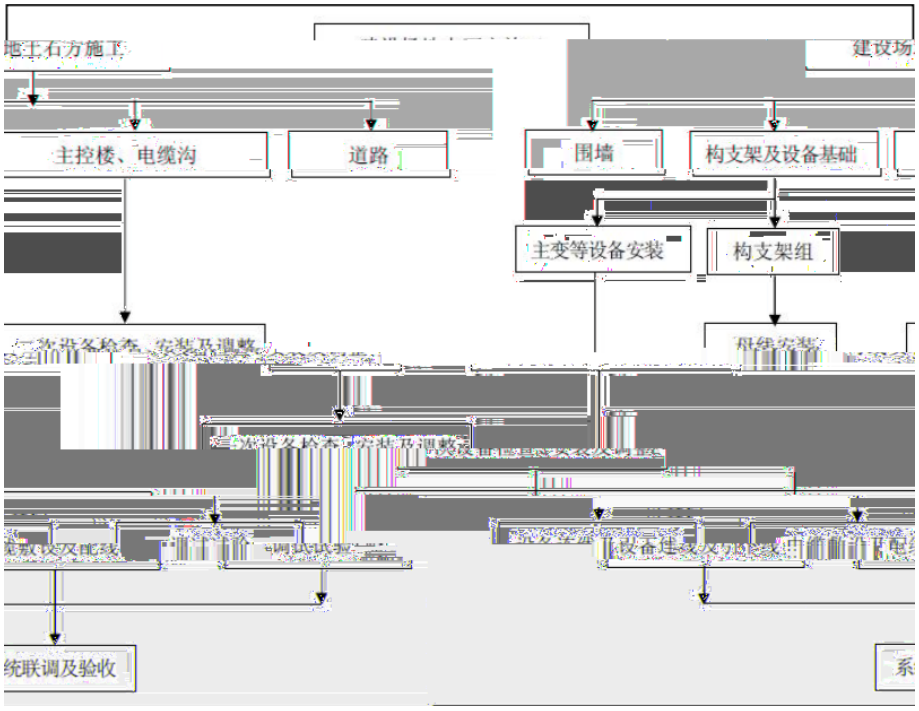
	2.1 G104 1
	2.2 2021 280 2021 1200MW “ 1200MW ” 500MW 700MWp 324MW/648MWh “ 200 540MW/1080MWh ”, ± 100kV 220kV **2.3** “ 200 540MW/1080MWh ” 220kV “ 324MW/648MWh 220kV **2.3.1** 106 3 2 4MW/8MWh 1 2MW/4MWh 5 3.1MW/6.19MWh 98 3.1MW/6.128MWh PCS PCS PCS 216 20 209 PCS 10 PCS 220kV 220kV 1 × 150MVA+1 × 240MVA

150MVA I 1# I 240MVA

II 2# II 2

2.5

2.2



2.2

220kV

9

2.6

9

3.1

2013 82 ,

Ä

3.2

2022 3 2021

1 قمي

3.4.1

A

3.4.2

1

220kV

2

3.1

		%	m/s	
2022 7 24 9:30~11:35 2022 7 24 23:05~2022 7 25 0:30	35~38 35~36	31~40 42~51	0.4~1.1 0.5~1.3	

3.4.3

3.4.4

1

GB3096-2008

2

3.2

			/
[redacted]		28dB(A) 133dB(A) Hz 12.5kHz 94dB(A)/114dB(A) 1000Hz	[redacted]

3.4.5

3.3 220kV dB(A)

3.6

± 100kV

3.7

3.7.1

HJ24-2020

500m

HJ19-2022

HJ19-2022

3.7.2

HJ2.4-2021

HJ2.4-2021 200m

3.4

3.4 220kV

		/m[1]			/m		/	
		X	Y	Z				
1	[redacted]	0	216	/	58		2	N 2

2	[redacted]	97	216	/	58			N 2
3		303	219	/	82			NE 5

[1] **0,0,0**

[redacted]

3.1 220kV

3.7.3

HJ24-2020

40m

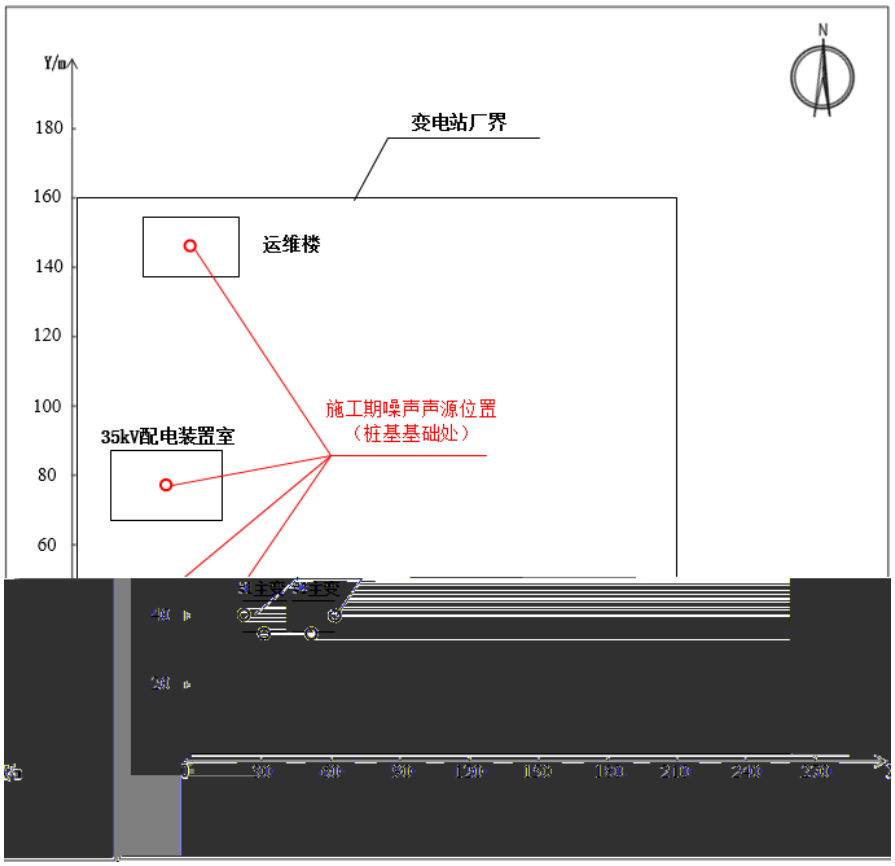
3.2

[redacted]

3.2

	3.8 1 220kV GB 3096-2008 2 2 GB8702-2014 1 “ ” 4000V/m 3 220kV GB12348-2008 2 60dB(A) 50dB(A) GB12523-2011 70dB(A) 55dB(A) 3 GB18597-2001 2013 36

	4.1 48961m^2 42440m^2 6521m^2 **4.2** HJ2034-2013 4.1 4.2 220kV 4.1



4.1　　220kV

4.1　　dB(A)

		5m	GB12523-2011	
	1	80	70	55
	1	70	70	55

4.2 **dB(A)**

4.4 220kV Leq dB(A)

[redacted]	57.4	46	58	60
	56.5	46	57	60
	51.8	48	53	60

15dB(A)

GB3096-2008

4.3

22m 4.5m

6 100%

1 100%

2.5m 1.8m

2 100%

100%

3 100%

15

150L/ · d 80% 3.6m^3

GB50015-2010

12~24h

HJ2.4-2021 A

4.6

220kV

4000V/m

4.7

4.7.1

4.7.1.1

220kV 1m

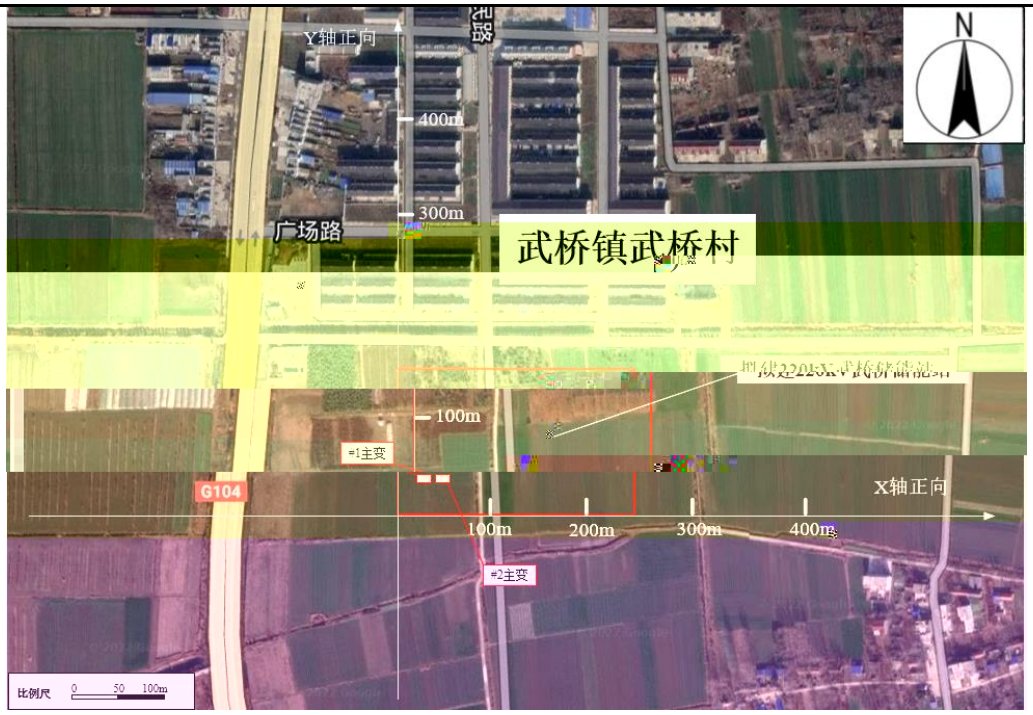
A 65dB(A) / 4.6

4.6

	[1]		/m[2]					
			X	**Y**	**Z**	/ / **dB(A)/m**		
1	#1		28.0	39.0	2.5	65dB(A)/ 1m	/	
2	#1		24.0	36.0	2.5	65dB(A)/ 1m	/	
3	#1		20.0	39.0	2.5	65dB(A)/ 1m	/	
4	#1		24.0	42.0	2.5	65dB(A)/ 1m	/	
5	#2		45.5	39.0	2.5	65dB(A)/ 1m	/	
6	#2		41.5	36.0	2.5	65dB(A)/ 1m	/	
7	#2		37.5	39.0	2.5	65dB(A)/ 1m	/	
8	#2		41.5	42.0	2.5	65dB(A)/ 1m	/	

[1] 8m× 6m× 5m [2]

0,0,0



4.2 220kV

4.7.1.2

220kV

A_{div} A_{atm} A_{gr}

A_{bar} A_{misc}

$$L_P(r)=L_P(r_0)+D_c-(A_{div}+A_{atm}+A_{bar}+A_{gr}+A_{misc})$$

Aatm

Agr Abar Amisc Dc

A_{div}

$$L_A\ r\ =L_A\ r_0\ -\ A_{div}$$

L_A r — dB(A)

L_A r_0 — r_0 A dB(A)

A_{div}—

b a b a r

1

2 3dB r/r0

3 6dB r/r0

8m 6m 5m

2

1m 4.7

4.8~ 4.9

4.7 **1m**

4.9

		m	
		#1	**#2**
1	[redacted]	165.8	165.8
2		185.9	183.7
3		323.4	307.8

4.10~ 4.11

$$L = L_0 - 20\lg\frac{r}{r_0}$$

L r dB

$$L_{1+2} = 10\lg[10^{\frac{L_1}{10}} + 10^{\frac{L_2}{10}}]$$

4.10 **dB(A)**

	*				
		1	**2**		
		17.8	18.4	21.1	60
		17.8	18.4	21.1	50
		33.5	33.5	36.5	60
		33.5	33.5	36.5	50
		37.5	33.0	38.8	60
		37.5	33.0	38.8	50
		24.3	24.3	27.4	60
		24.3	24.3	27.4	50

***** **24**

4.11 **dB(A)**

		/ dB(A)		/ dB(A)		/ dB(A)		/ dB(A) *		/ dB(A)		/ dB(A)			
1	[redacted]	46	37	46	37	60	50	23.6	23.6	46.0	37.2	0.0	0.2		
2	[redacted]	46	39	46	39	60	50	22.7	22.7	46.0	39.1	0.0	0.1		
3	[redacted]	48	39	48	39	60	50	18.0	18.0	48.0	39.0	0.0	0.0		

***** **24**

220kV

GB12348-2008 2

60dB(A) 50dB(A)

GB3096-2008 2 60dB(A) 50dB(A)

4.8

220kV 1 $6m^3$ 6

150L/ · d 80% $0.72m^3$

12~24h

4.9

1

2021

15

2

2021 15

HW31 900-052-31

2021 15

	4.10 GB18597-2001 1 $^{-7}$cm/s 2 2 $^{-10}$cm/s HJ 169-2018
	4.11 1 2 3 4 5 220kV

	5.1 1 2 3 4 **5.2** 5

	5.3 **5.4** **5.5**

	5.6 **5.7** **5.8** 1m A 65dB(A) GB12348-2008 2 **5.9** 220kV GIS **5.10** **5.11** 1 220kV 2021 15 2 2021 15 HW31 900-052-31 10 20

	2021 15 **5.12** GB18597-2001 1 $^{-7}$cm/s 2 2 $^{-10}$cm/s HJ169-2018

	5.13 1 2 1~2 3

		Leq				GB3096-2008 GB12523-2011
						GB8978-2014
		Leq				GB3096-2008 GB12348-2008

5.1

5.14

	1 2 3 4			

		/	/	/
	/	/	/	/
	1 2 GB12523-2011	GB12523 2011		GB12348-2008 2

	/	/	/	/
			/	/
	/	/		GB8702-2014 4000V/m

	/	/	80m^3 100% MU15 M10 P6 1:2 50 GB18597-2001	
	/			
	/	/	/	/

200	**540MW/1080MWh**

1

		☐ ☐
		☑ ☑ ☑

☑

☑

☑

2

200
540MW/1080MWh

2023 2

1. 1

1.1 1

1.1.1 1

1.1.2 1

1.1.3 1

1.2 1

1.3 2

1.4 2

2. 3

2.1 3

2.1.1 3

2.1.2 3

2.1.3

1.

1.1

1.1.1

1 2014

2015 1 1

2 2018

2018 12 29

1.1.2

1 HJ2.1-2016

2 HJ24-2020

3 HJ681-2013

4 GB 8702-2014

5 HJ1113-2020

6

1.1.3

1 324MW/648MWh

2022 9

1.2

HJ24-2020

1-1

1-1

	220kV			

1-1 220kV

1.3

1

1-2

			kV/m		kV/m

2

GB8702-2014 1

50Hz 4000V/m

3

220kV 40m

4

220kV

1.4

40m

220kV

2.

2.1

2022 7 24

2.1.1

2.1.2

1

2

2

2022 7 24 9:30~11:35 0.4m/s~1.1m/s

31%~40%

2.1.3

2.1.4

1

HJ681-2013

2

2-1

				/
SEM-600	SEM-600 /LF-01	C-0609/ G-0609	1Hz 100kHz 0.5V/m 100kV/m 30nT~3mT	E2021-0114955 2021.12.2~2022.12.1

2.1.5

2-2

2-2

		V/m	
1	220kV 1	<0.5	<0.030
2	220kV 2	<0.5	<0.030
3	220kV 3	<0.5	<0.030
4	220kV 4	0.6	0.043

3.

3.1

HJ24-2020

220kV

3.1.1

1

220kV

220kV

3-1

3-1 220kV

	220kV	220kV
	3 × 240MVA	1 × 150MVA+1 × 240MVA
220kV	GIS	GIS
220kV		
35kV		GIS
	#1 P=3.0MW~14.0MW U=227.8kV~228.8kV I=14.5A~44.0A #2 P=13.3MW~18.4MW U=227.8kV~228.5kV I=34.5A~47.8A #3 P=13.2MW~25.1MW U=227.8kV~228.8kV I=31.3A~63.0A	/
m^2	11300	42440m^2 42440m^2 11630m^2

	220kV	220kV
	220kV 2020 - 329	

1nT~20mT

4

2020 11 3

7~16 28~43% 3.0m/s

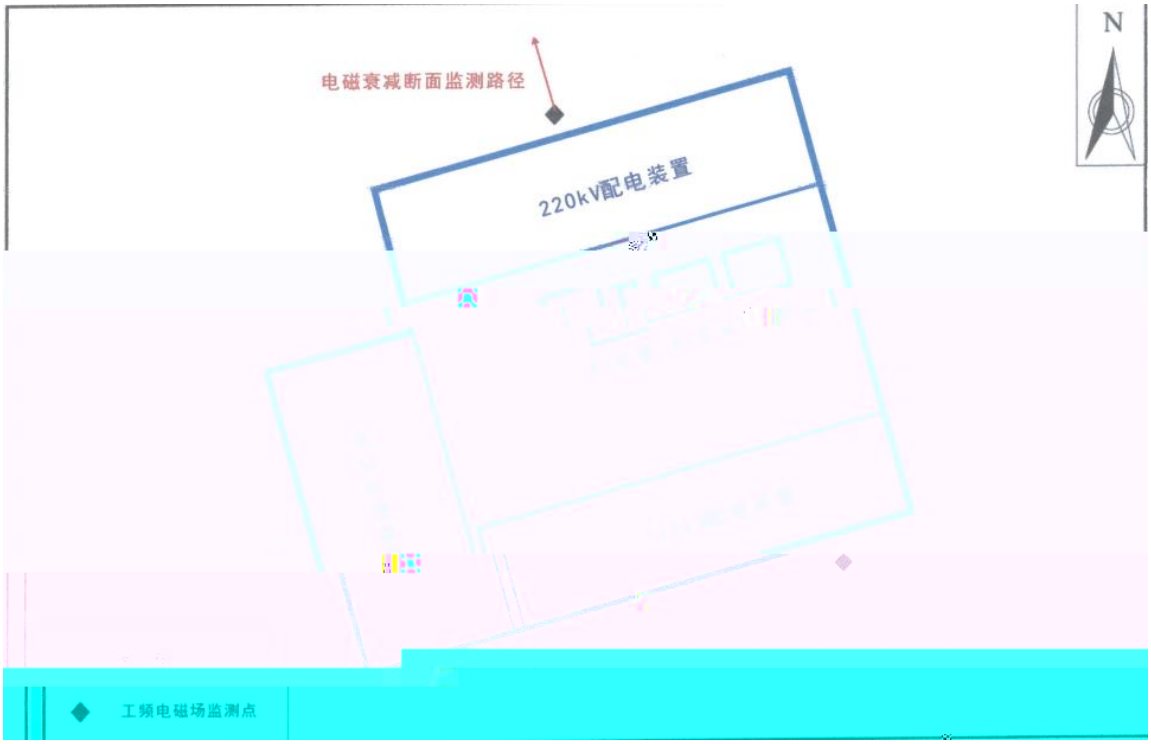
5

161712050220

6

220kV 3-2

3-



3-1

3-2 220kV 5m

5.2V/m~275.8V/m 0. 220kV

14.3V/m~68.5V/m

0.

220kV

0.5 V/m~0.6V/m 0.030

GB8702-2014

4000V/m

10

GB8702-2014 “

” 4000V/m

4.