



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



小水电技术导则 设计

第9部分：工程投资

SHP/TG 002-09:2019



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鸣 谢

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——全球区域可持续能源中心网（GN-SEC），特别是西非国家经济共同体可再生能源和能源效率中心（ECREEE）、东非可再生能源和能源效率中心（EACREE）、太平洋可再生能源和能源效率中心（PCREEE）和加勒比可再生能源和能源效率中心（CCREEE）。

中国政府推动了本导则的最终定稿，对其完成具有重要意义。

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使用中如有其他意见和建议，欢迎提供，以便再版更新。

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| 7.6 | | 9 |
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| 8.1 | | 10 |
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| 9 | | 11 |
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| A () | | 12 |
| B () | | 30 |

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4

4.1 ()

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4.2

4.3

4.4

5 ~8

9

5

5.1

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5.2

5.2.1

- a) ()
- b)
- c) 10 kV 10 kV
- d)
 - 1) :
 - 2) :
 - 3) :
 - 4) :
- e) ()

5.2.2

- a) () () (/ /) () ; () ()

b)

() ()

() ()

c)

() () () ()
() ()

d)

()

e)

() () ()

f)

g)

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5.2.3

a)

b)

c)

5.2.4

5.2.5

5.3

A

6

6.1

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2

6.2

6.2.1

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1)

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5)

()

b)

1)

2)

3)

4) , ,

5) ,

6) , ()

1) , , : ,

2) , 5% ~ 8% ,

622

623

624

63

64

- a) :
- b) = x
- c) = (+) x
- d) = (+ +) x
- e) = + + +

7

7.1

7.1.1

7.1.2

7.1.3

7.1.4

7.1.5

() 2% ~ 3%

7.2

7.2.1

7.2.2

7.2.3

7.2.3.1

7.2.3.2 15% ~ 20%

7.2.4

0.9% ~ 1.1%

1.1% ~ 1.3%

()

1.1% ~ 1.3%

7.3

7.3.1

- a) :
- b) :
- c) :
- d) :
- e) :
- f) :
- g) : ()
- h) :
- i) :
- j) :
 - 1) , , ,
 - 2) ,
 - 3) ,

7.3.2

7.4

7.3

7.5

- a) : , ()
- b) : , 7.1 ~ 7.4 2% ~ 3% , 7.1 ~ 7.4

- c) 0.5% :
- d) :
- e) :
- f) :
- g) :
- h) 7.1 ~ 7.4 0.5% :

7.6

7.6.1

- a) 7.1 ~ 7.4
- b) 5% ~ 10%

1) $E_i = F_i [(1 + p)^{i-1} - 1]$ (1)

2) $E_i = F_i [(1 + p_2) (1 + p_4) \dots (1 + p_i) - 1]$ (2)

3) $E = \sum_{i=1}^N E_i$ (3)

E — ;

E_i — i ;

N — ;

i — ;

F_i — i () ;

p — () ;

p_i — i () ;

7.6.2

() 5.1 ~ 5.4

:

$$S = \sum_{n=1}^N \sum_{m=1}^n F_m b_m - \frac{1}{2} F_n b_n \ddot{\theta} + \sum_{m=0}^{n-1} S_m \dot{\theta} \quad \dots\dots\dots (4)$$

:

- S — ;
- N — ;
- n — ;
- m — ;
- F_n, F_m — n, m ;
- b_n, b_m — ;
- i — ;
- S_m — m ;

8

8.1

8.1.1

a) ()

b)

c)

()

8.1.2

a)

b)

c)

d)

e)

8.1.3

a)

b)

c)

8.1.4

8.1.5

82

B

9

9.1

9.1.1

9.1.2

9.1.3

:

a)

b)

c)

2% ~ 4%

SF₆

d)

e)

92

a)

b)

c)

10% ~ 15%

93

:

A
()

A.1

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A.1 ()

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A 2

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A 2 ()

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A 2 ()

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A 2 ()

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A 2 ()

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A 2 ()

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A 2 ()

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