

1.9 แบบฟอร์มตัวอย่างเอกสารแสดง Design Data and Guarantee

หมายเหตุ

1. ข้อมูลของ Design Data and Guarantee อ้างอิงกับเอกสารดังต่อไปนี้
 - (1) SPECIFICATION NO.: RSUB-010/2564 (Rev. 1.0) SUBSTATION CONTROL AND PROTECTION SYSTEM (SCPS)
 - (2) ADDENDUM SPECIFICATION NO. RSUB-010/2564 (Rev. 1.0): SUBSTATION CONTROL AND PROTECTION SYSTEM (SCPS)
 - (3) เอกสารแนบท้ายเอกสารประกวดราคาอิเล็กทรอนิกส์ ข้อ 1.1 รายละเอียดและขอบเขตของงาน
2. เนื่องจากอุปกรณ์ Protective Relay ทั้งหมดของทุกสถานีไฟฟ้า สำหรับการประกวดราคาครั้งนี้ กำหนดให้เสนอผลิตภัณฑ์ รุ่น และประเทศผู้ผลิต ตามที่ปรากฏอยู่ในเอกสารแนบท้ายเอกสารประกวดราคาอิเล็กทรอนิกส์ ข้อ 1.15 รายชื่อผลิตภัณฑ์อุปกรณ์ป้องกันสำหรับงานบำรุงรักษาสถานีไฟฟ้า (Acceptance Lists) ดังนั้น Design Data and Guarantee ในการประกวดราคาครั้งนี้จะไม่มีรายละเอียดของข้อกำหนดในส่วนที่เป็นเนื้อหาเดียวกันกับที่ได้พิจารณาไปแล้วในการขึ้นทะเบียนอุปกรณ์

DESIGN DATA AND GUARANTEE

Table of Contents
Design Data and Guarantee

ANNEX-๑๓.(๒๑๖.)01/2565

(23 pages)

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2560 (Rev. 1.0)

Manufacturer:

Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

1. SCPS (Server) System

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev. 1.0)

Manufacturer:
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Design data and guarantee of IEC 61850 Based SCPS Equipment

2.Engineering Work Station (EWS)

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
Certified copy of type test certificates and test results are attached	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev. 1.0)

Manufacturer:
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Design data and guarantee of IEC 61850 Based SCPS Equipment

3. Station-operator HMI or station level operator interface (SLOI)

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System

Manufacturer:

And Addendum RSUB-010/2564 (Rev. 1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

4. Engineering tool (Laptop & Software)

Description	Unit	Required Data	Proposed Data
4.1 Engineering tool (Laptop)	-	YES	
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
4.2 Engineering tool (Software)	-	YES	
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev. 1.0)

Manufacturer:

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Design data and guarantee of IEC 61850 Based SCPS Equipment

5. Printing Facility

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Catalog number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev. 1.0)

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Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

6. IED Bay Control Unit (BCU)

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
IEDs certified document, reference number	-	YES	
High-resolution time tagging capability	-	YES	
Typical location	-		
- MV switchgear	-	Low voltage compartment	
- HV switch gear	-	Marshalling cubicle/junction box/control switch board/relay cabinet marshalling	
- HV/MV power transformer	-	box/remote control cabinet	
Acquisition any I/O data via an interface to IEC devices	-	YES/NO	
Integrated BCU and Protective relay are proposed	-	YES/NO	
If integrated solution are proposed, processors boards for control system and for protection system shall be completely independent	-	YES	
Certified copy of type test certificates and test results are attached	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System

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And Addendum RSUB-010/2564 (Rev. 1.0)

Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

7. Relay Test Block

Description	Unit	Required Data	Proposed Data
7.1 Relay Test Block Type01			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
7.2 Relay Test Block Type02			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

8. Time Data Server (TDS) or Time Reference Unit (TRU)

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Expected accuracy (\pm) between Network devices	millisecond	1) 0.1ms (Expected Time Synchronizing of IED Clocks – one order of magnitude better than IED time stamp resolution) 2) Note: Typical Accuracy 3) 1-2 ms (NTP) 4) 1 microsec (IEEE 1588 or IRIG-B)	
Outline drawing number (to be attached)	-	YES	
Synchronization time between SCPS internal clock and GPS via TDS	millisecond	Within +/-0.5m millisecond	
Time protocol format	-	NTP/SNTP, and IRIG-B or similar such as IEEE 1588	
Independent SCPS real time clock drift	millisecond	Not exceed 20 millisecond per hour	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

9. Communication Gateway (CGW)

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

10. Digital Fault Recorder

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

11. Network Management System

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:
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Design data and guarantee of IEC 61850 Based SCPS Equipment

12. Cyber Security Management System

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
IEDs certified document, reference number	-	YES	
High-resolution time tagging capability	-	YES	
Typical location	-		
- MV switchgear	-	Low voltage compartment	
- HV switch gear	-	Marshalling cubicle/junction box/control switch board/relay cabinet marshalling	
- HV/MV power transformer	-	box/remote control cabinet	
Acquisition any I/O data via an interface to IEC devices	-	YES/NO	
Integrated BCU and Protective relay are proposed	-	YES/NO	
If integrated solution are proposed, processors boards for control system and for protection system shall be completely independent	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

13. Industrial Ethernet Switch (IES)

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
Certified copy of type test certificates and test results are attached	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564(Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:
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Design data and guarantee of IEC 61850 Based SCPS Equipment

14. Operator console furniture with chair

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:

Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

15. SCPS software and licenses

Description	Unit	Required Data	Proposed Data
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:
Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

16. Equipment Cabinet Enclosures

Description	Unit	Required Data	Proposed Data
16.1 115 kV Protection and Control Cubicle			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
16.2 22 kV Indoor enclosures			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
16.3 SCPS Station Cubicle			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

17. Interconnecting Cables and Wiring

Description	Unit	Required Data	Proposed Data
1) Fiber Optic cables and accessories			
Manufacturer/Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Fiber optic cables	-		
- Type	-	Glass or plastic	
- Construction	-	Rodent proof	
2) Communication network Cable and accessories			
Manufacturer/Country of origin		YES	
Type or model number		YES	
Standards		YES	
Catalog number (to be attached)		YES	
3) Optical Fibre Distribution Unit (FDU) and accessories			
Manufacturer/Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
4) Metallic cables and accessories			
Manufacturer/Country of origin		YES	
Type or model number		YES	
Standards		YES	
Catalog number (to be attached)		YES	
5) Terminal blocks and accessories			
Manufacturer/Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Type	-	Heavy-duty removable link type, and with by pass bridge for ac current input	
6) Control Cable and External Cables accessories			

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:
Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

Manufacturer/Country of origin		YES	
Type or model number		YES	
Standards		YES	
Catalog number (to be attached)		YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:
Bidder:

Design data and guarantee of IEC 61850 Based SCPS Equipment

18. Conduit and Raceway

Description	Unit	Required Data	Proposed Data
1) Conduit			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
	-		
2) Raceway			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attach	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

19.Power Supply System

Description	Unit	Required Data	Proposed Data
Inverter			
Manufacturer/Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System
And Addendum RSUB-010/2564 (Rev.1.0)

Manufacturer:
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Design data and guarantee of IEC 61850 Based SCPS Equipment

20. Power Distribution System

Description	Unit	Required Data	Proposed Data
Manufacturer	-		
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	
Protection device of each main DC supply circuit, in DC distribution boards	-	Circuit breaker	
Protection device of tapped DC supply feed to each IED BCU& IED Protective Relay	-	Miniature Circuit breaker	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System

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And Addendum RSUB-010/2564 (Rev.1.0)

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Design data and guarantee of IEC 61850 Based SCPS Equipment

21. Accessory Part for Protection and Control Circuit

Description	Unit	Required Data	Proposed Data
21.1 27X (Under Voltage Relay) for DC Circuits			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
21.2 Trip Circuit Supervision Relay for 115 kV			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
21.3 Lockout Relay for 115 kV Busbar Protection and 115 kV Transformer Protection			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
21.4 Lockout Relay for 22 kV 50BF Protection			
Manufacturer	-	YES	
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	

Invitation to Bid No.: อร.(ปจจ.)01/2565

Specification No.: RSUB-010/2564 (Rev. 1.0) Substation Control and Protection System

And Addendum RSUB-010/2564 (Rev.1.0)

Design data and guarantee of IEC 61850 Based SCPS Equipment

Manufacturer:

Bidder:

22. Protection Management System (PMS)

Description	Unit	Required Data	Proposed Data
Manufacturer	-		
Country of origin	-	YES	
Type or model number	-	YES	
Standards	-	YES	
Catalog number (to be attached)	-	YES	
Outline drawing number (to be attached)	-	YES	