



**Approved List of Bidders for Supply and Construction Work and
Manufacturers/Types/Models of Equipment for Substation
EGAT's Transmission System**

Electricity Generating Authority of Thailand (EGAT) hereby announces the Approved List of Bidders for Supply and Construction Work and Manufacturers/Types/Models of Equipment for Substation (Revision 3/2021).

ELECTRICITY GENERATING AUTHORITY OF THAILAND

April 23 , 2021

(Miss Wallapa Chewadhnakorlkul)

Administrative Officer Level 10

International Procurement Department - Transmission Segment

Remark: This PQ List does not apply to any ongoing PQ-based bids. The evaluation of proposals for each bid will be evaluated according to the PQ List attached at the end of Section A in the bidding document.

EGAT Accepted List Table

(Revision 3/2021)

No.	Description	Revision
1	EGAT Accepted Bidders List for Supply and Construction of Substations	Jan 2021
2	EGAT Accepted Bidders List for Shunt Capacitor Bank	May 2020
3	EGAT Accepted Coupling Capacitor Voltage Transformer List (CCVT)	May 2020
4	EGAT Accepted Current Transformer List (CT)	Jan 2021*
5	EGAT Accepted Power Circuit Breaker List (CB)	Jul 2019
6	EGAT Accepted Surge Arrester List	May 2020
7	EGAT Accepted Gas Insulated Switchgear List (GIS)	Jan 2021
8	EGAT Accepted Disconnecting Switch List (DS)	Jul 2019
9	EGAT Accepted Manufacturer List for Protective Relay	Feb 2021
10	EGAT Accepted Main Relay List No. 1	Feb 2021
11	EGAT Accepted Main Relay List No. 2	Feb 2021
12	EGAT Accepted Manufacturer List for Fault Recording System (FRS)	Apr 2019
13	EGAT Accepted Fault Recording System List (FRS)	Feb 2021

*updated

EGAT Accepted Bidders List for Supply and Construction of Substations

No.	Bidder / Country	Acceptance for		
		500 kV	230 kV	115&69 kV
1	ABB Power Grids (Thailand) Limited / Thailand	YES	YES	YES
2	Grid Solutions SAS / France	YES	YES	YES
3	Hitachi Ltd. / Japan	YES	YES	YES
4	Hyosung Heavy Industries Corporation / Korea	YES	YES	YES
5	KEC International Limited / India	YES	YES	YES
6	Mitsubishi Corporation / Japan	YES	YES	YES
7	Mitsubishi Electric Corporation / Japan	YES	YES	YES
8	SEPCOIII Electric Power Construction Corporation / China	YES	YES	YES
9	Siemens Energy Limited / Thailand	YES	YES	YES
10	Sri U-Thong Limited / Thailand	YES	YES	YES
11	TEDA Company Limited / Thailand	YES	YES	YES
12	Joint Venture of Sinohydro and SEPCOIII (Sinohydro (Thailand) Company Limited / Thailand and SEPCOIII Electric Power Construction Corporation / China)	YES	YES	YES
13	Consortium of Grid Solutions (Thailand) Ltd. and Grid Solutions SAS (Grid Solutions (Thailand) Ltd. / Thailand and Grid Solutions SAS / France)	YES	YES	YES
14	Consortium of Larsen & Toubro Limited and Sri U-Thong Limited (Larsen & Toubro Limited / India and Sri U-Thong Limited / Thailand)	YES	YES	YES
15	Consortium of Loxley Public Co., Ltd. and Sri U-Thong Limited (Loxley Public Co., Ltd. / Thailand and Sri U-Thong Limited / Thailand)	YES	YES	YES
16	Consortium of Sinohydro and SEPCOIII (Sinohydro (Thailand) Company Limited / Thailand and SEPCOIII Electric Power Construction Corporation / China)	YES	YES	YES
17	SBV Consortium (Sumitomo Corporation / Japan, Black & Veatch (Thailand) Limited / Thailand and Italian-Thai Development / Thailand)	YES	YES	YES
18	The Consortium of Mitsubishi Corporation and DEMCO Public Company Limited (Mitsubishi Corporation / Japan and DEMCO Public Company Limited / Thailand)	YES	YES	YES
19	The Consortium of Precise System and Project Co., Ltd. and Hitachi Ltd. (Precise System and Project Co., Ltd. / Thailand and Hitachi Ltd. / Japan)	YES	YES	YES
20	The Consortium of Mitsubishi Corporation and PWH (Thailand) Company Limited (Mitsubishi Corporation / Japan and PWH (Thailand) Company Limited / Thailand)	YES	YES	YES
21	Consortium of Larsen & Toubro Limited and Mitsubishi Corporation (Larsen & Toubro Limited / India and Mitsubishi Corporation / Japan)	YES	YES	YES
22	Sri U-Thong & LPS CONSORTIUM (Sri U-Thong Limited / Thailand and LOXLEY POWER SYSTEMS COMPANY LIMITED / Thailand)	YES	YES	YES
23	The Consortium of DEMCO Public Company Limited, KINDEN Corporation and Sri U-Thong Limited. (DEMCO Public Company Limited / Thailand, KINDEN Corporation / Japan and Sri U-Thong Limited / Thailand)	YES	YES	YES
24	Hyundai Engineering & Construction Co., Ltd. / Korea		YES	YES
25	Larsen & Toubro Limited / India		YES	YES
26	Precise System and Project Co., Ltd. / Thailand		YES	YES
27	Kalpataru Power Transmission Limited / India		YES	YES
28	PWH (THAILAND) CO., LTD. / Thailand		YES	YES
29	DEMCO Public Company Limited / Thailand		YES	YES
30	Italthai Engineering Co., Ltd. / Thailand		YES	YES
31	Sieyuan Electric Co., Ltd. / China		YES	YES
32	Black & Veatch (Thailand) Ltd. / Thailand		YES	YES
33	PESTECH Sdn. Bhd. / Malaysia		YES	YES
34	Shandong Taikai Power Engineering Co., Ltd. / China		YES	YES
35	SC-ST-BYP JOINT VENTURE COMPANY LIMITED / Thailand		YES	YES

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EGAT Accepted Bidders List for Supply and Construction of Substations

No.	Bidder / Country	Acceptance for		
		500 kV	230 kV	115&69 kV
36	China CAMC Engineering CO., LTD. / China		YES	YES
37	Kinden Corporation - Kinden (Thailand) Co., Ltd. Joint Venture (Kinden Corporation / Japan and Kinden (Thailand) Co., Ltd. / Thailand)		YES	YES
38	The Joint Venture of SRI and PWH (Sri U-Thong Limited / Thailand and PWH (Thailand) Company Limited / Thailand)		YES	YES
39	The Consortium of Kinden Corporation and Perfect Engineering Service Public Co., Ltd. (Kinden Corporation / Japan and Perfect Engineering Service Public Co., Ltd. / Thailand)		YES	YES
40	The Consortium of SCL-STC and ITE (Sinohydro Corporation Limited / China, Sinohydro (Thailand) Company Limited / Thailand and Italthai Engineering Co., Ltd. / Thailand)		YES	YES
41	The Consortium of Siemens Energy Limited and Sinkarnchang Company Limited (Siemens Energy Limited / Thailand and Sinkarnchang Company Limited / Thailand)		YES	YES
42	The Consortium of Siemens Energy Limited and Standard Performance Company Limited (Siemens Energy Limited / Thailand and Standard Performance Company Limited / Thailand)		YES	YES
43	JOINT VENTURE OF SCL, STC AND XD (Sinohydro Corporation Limited / China, Sinohydro (Thailand) Co., Ltd. / Thailand and Xian Electric Engineering Co., Ltd. / China)		YES	YES
44	JOINT VENTURE OF SINOHYDRO CORPORATION LIMITED AND SINOHYDRO (THAILAND) CO., LTD. (Sinohydro Corporation Limited / China and Sinohydro (Thailand) Co., Ltd. / Thailand)		YES	YES
45	LOXLEY & LPS CONSORTIUM (LOXLEY PUBLIC COMPANY LIMITED / Thailand and LOXLEY POWER SYSTEMS COMPANY LIMITED / Thailand)		YES	YES
46	The consortium of DEMCO Public Company limited and KINDEN Corporation (DEMCO Public Company Limited / Thailand and KINDEN Corporation / Japan)		YES	YES
47	The Consortium of Shanghai Electric Group Company Limited & Future Electrical Control Company Limited (Shanghai Electric Group Company Limited / China and Future Electrical Control Company Limited / Thailand)		YES	YES
48	Hyundai Heavy Industries Co., Ltd. / Korea			YES
49	LOXLEY POWER SYSTEMS COMPANY LIMITED / Thailand			YES
50	Future Electrical Control Company Limited / Thailand			YES
51	NARI Group Corporation / China			YES
52	Consortium ITE and HHI (Italthai Engineering Co., Ltd. / Thailand and Hyundai Heavy Industries Company Limited / Korea)			YES
53	The Consortium of Demco Public Co., Ltd. Perfect Engineering Service Public Co., Ltd. And Demco Power Co., Ltd. (Demco Public Company Limited / Thailand, Perfect Engineering Service Public Co., Ltd. / Thailand and Demco Power Co., Ltd. / Thailand)			YES

Note

Additionally, any bidders in the EGAT Accepted Bidders List for Supply and Construction of Substations of the same voltage level are allowed to form a new consortium or joint venture with other bidders in the accepted list. All parties of the new consortium or joint venture shall be accepted at the voltage level of the proposal.

EGAT Accepted Bidders List for Shunt Capacitor Bank

Description	Bidder / Country
230 kV (72 MVAR)	The Consortium of Precise System and Project Co.,Ltd. and Precise Corporation Co.,Ltd. / Thailand
	ABB Limited / Thailand
	Sieyuan Electric Co., Ltd. / China
115 kV (12 or 13.2 MVAR, 24 or 26.4 MVAR, 36 or 39.6 MVAR, 48 or 52.8 MVAR)	The Consortium of Precise System and Project Co.,Ltd. and Precise Corporation Co.,Ltd. / Thailand
	ABB Limited / Thailand
	Siemens Limited / Thailand
	Sieyuan Electric Co., Ltd. / China
	Samwha Capacitor Co., Ltd / South Korea



EGAT Accepted Coupling Capacitor Voltage Transformer List

Description	Manufacturer / Country	Type/Model
500 kV CCVT	ELECTROTECHNICAL ARTECHE HER MANOS, S.L. / Spain	DFK-525
	GE GRID SOLUTIONS (U.S.) ALSTOM GRID LLC / U.S.A.	OTCF 550
	TRENCH / Canada	TEIRF 500 A
	NISSIN ELECTRIC CO., LTD. / Japan	IM550
230 kV CCVT	ABB AB SVERIGE / Sweden	CPB 245
	GE GRID SOLUTIONS (U.S.) ALSTOM GRID LLC / U.S.A.	OTCF 245
	ELECTROTECHNICAL ARTECHE HER MANOS, S.L. / Spain	DFK-245
	NISSIN ELECTRIC (WUXI) CO., LTD. / China	WVL230-5H
	TRENCH ITALIA S.R.L. CAIRO MONTENOTTE / Italy	TCVT 245
	EMEK ELEKTRIK ENDUSTRISI A.S. / Turkey	KGT-245
115 kV CCVT	ABB AB SVERIGE / Sweden	CPB 123
	GE GRID SOLUTIONS (U.S.) ALSTOM GRID LLC / U.S.A.	OTCF 123
	ELECTROTECNICA ARTECHE HERMANOS, S.L. / Spain	DDB-123
	EMEK ELEKTRIK ENDUSTRISI A.S. / Turkey	KGT-125
	NISSIN ELECTRIC (WUXI) CO., LTD. / China	WVL115-10H
	TRENCH ITALIA S.R.L. CAIRO MONTENOTTE / Italy	TCVT 123

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EGAT Accepted Current Transformer List

Description	Manufacturer / Country	Type / Model
230 kV CT, 3000A, 50kA	ABB AB SVERIGE / Sweden	IMB 245
	ELECTROTECHNICAL ARTECHE HER MANOS, S.L. / Spain	CA-245
	NISSIN ELECTRIC CO., LTD. / Japan	FGCH-170
	ABB JIANGSU JINGKE INSTRUMENT TRANSFORMER CO., LTD. / China	LB7-245 (Creepage Distance 7812 mm)
115 kV CT, 2000A, 40kA	ABB AB SVERIGE / Sweden	IMB 123
	EMEK ELEKTRIK ENDUSTRISI A.S. / Turkey	ATH-125
	ELECTROTECHNICAL ARTECHE HER MANOS, S.L. / Spain	CA-123
	NISSIN ELECTRIC CO., LTD. / Japan	FGCH-100
	ABB JIANGSU JINGKE INSTRUMENT TRANSFORMER CO., LTD. / China	LB7-145 (Creepage Distance 4495 mm)
JIANGSU SIEYUAN HERTZ INSTRUMENT TRANSFORMER CO., LTD. / China	LVB-110	

EGAT Accepted Power Circuit Breaker List

Description	Manufacturer / Country	Type/Model	1&3 pole	3 pole	Type of Mechanism
550 kV, 4,000 A, 50 kA GCB (Class C1)	Siemens / Germany	3AP2FI-550kV	Yes	Yes	FA5 (Spring)
	ABB / Sweden	HPL550B2	Yes	Yes	BLG1002A (Spring)
	GE / France	GL317	Yes	Yes	FK3-4 (Spring)
245 kV, 4,000 A, 50 kA GCB (Class C1)	ABB / Sweden	LTB245E1	Yes	Yes	BLK222 (Spring)
				Yes	BLG1002A (Spring)
	GE / France	GL314	Yes	Yes	FK3-1 (Spring)
	Siemens / Germany	3AP1FI-245	Yes	Yes	FA2 (Spring)
		3AP1FG-245		Yes	FA4 (Spring)
	Sieyuan / China	LW58-252	Yes	Yes	SRCT36E (Spring)
				Yes	SSCT33 (Spring)
123 kV, 3,150 A, 40 kA GCB (Class C1)	ABB / Sweden	LTB145D1/B		Yes	BLK222 (Spring)
	ABB / China	LTB145D1/B		Yes	BLK222 (Spring)
	GE / Germany	GL312F1/4031P		Yes	FK3-1 (Spring)
	Siemens / Germany	3AP1FG-123		Yes	FA2 (Spring)
	Siemens / India	3AP1FG-145kV		Yes	FA2 (Spring)
	Sieyuan / China	LW36-145		Yes	SRCT36E (Spring)

EGAT Accepted Surge Arrester List

Description	Manufacturer / Country	Type / Model
396 kV SA (Porcelain)	Toshiba Hamakawasaki Factory / Japan	RVLQB-396HY
	Hubbell Power Systems Inc. / USA	VN/215516-9141
	ABB Power Grids Sweden AB / Sweden	EXLIM P396-GH550
	Tridelta Meidensha GmbH / Germany	SB 396/20.4-I
192 kV SA (Porcelain)	Toshiba Hamakawasaki Factory / Japan	RVLQC-192VY
	Siemens Aktiengesellschaft / Germany	3EP4 192-2PE42-1XX1-Z
	Hubbell Power Systems Inc. / USA	MVN192BB152AA
	ABB Power Grids Sweden AB / Sweden	EXLIM Q192-EH245
	Tridelta Meidensha GmbH / Germany	SB 192/10.3-0
108 kV SA (Porcelain)	Toshiba Hamakawasaki Factory / Japan	RVLQC-108VY
	Siemens Aktiengesellschaft / Germany	3EP4 108-2PE31-1XA1-Z
	Hubbell Power Systems Inc. / USA	MVN108BB088AA
	ABB Power Grids Sweden AB / Sweden	EXLIM Q108-EH123
	Tridelta Meidensha GmbH / Germany	SB 108/10.3-0

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EGAT Accepted Gas Insulated Switchgear List

Description	Manufacturer / Country	Type/Model	Equipment Rating			Type of Mechanism			Referenced GIS Component		
			kV	A	kA	Spring	Hydraulic	Hydraulic-Spring	CT	VT	Bushing (Porcelain)
						Manufacturer / Country	Manufacturer / Country	Manufacturer / Country			
550 kV, 4000 A, 50 kA GIS	ABB Power Grids Switzerland Ltd. / Switzerland	ELK-3	550	4000	63			✓	Pfiffner/Switzerland	Trench/Germany Ritz/Germany Pfiffner/Switzerland	LAPP/Germany XD/China
	Siemens AG / Germany	8DQ1P2	550	4000	50	✓			Trench/Germany	Trench/Germany	HSP/Germany
	GE Grid Solutions / France	T155	550	4000	50	✓			Pfiffner/Switzerland ENPAY/Turkey	GE/France Ritz/Germany	PPC/Austria Ceralep/France
	Hitachi Ltd. / Japan	IFT	550	6300	63		✓		Hitachi/Japan Meiden Chemical/Japan	Nissin/Japan Toko/Japan	N.G.K./Japan
	Hyundai Heavy Industries Co., Ltd. / Korea	550SR	550	4000	63		✓		Daeyoung/Korea Hyundai/Korea	Nissin/Japan TOKO/Japan Trench/Germany	PPC/Germany PPC/Sweden TYCO/Switzerland N.G.K./Japan
	Mitsubishi Electric Corporation / Japan	500-GPS	550	4000	50	✓			Melco/Japan	Melco/Japan	N.G.K./Japan
	New Northeast Electric Group High Voltage Switchgear Co., Ltd./ China	ZF15-550	550	4000	63			✓	Liaoning Xinming Instrument Transformer Co.,Ltd./China	Liaoning Xinming Instrument Transformer Co.,Ltd./China	Liling Huaxin Insulator Technology Cp.,Ltd./China
245 kV, 4000 A, 50 kA GIS	ABB Power Grids Switzerland Ltd. / Switzerland	ELK-14	245	4000	63 50			✓	Pfiffner/Switzerland ABB/Czech	Pfiffner/Switzerland Trench/Germany	LAPP/Germany XD/China
	GE Grid Solutions / France	B105	245	4000	50	✓			ENPAY/Turkey ALCE/Turkey GE/France	GE/France	PPC Insulators/Austria Ceralep/France GE/France
	Hyosung Corporation / Korea	HSG-305B	300	4000	50	✓			Hyosung/Korea	Nissin/Japan Toko/Japan	LAPP/Germany
	Xian XD Switchgear Electric Co., Ltd./ China	ZF9-252	245	4000	50	✓			XD/China Nanjing Zhida Electric/China	XD/China	XD/China
	New Northeast Electric Group High Voltage Switchgear Co., Ltd./ China	ZFW20-252	245	4000	50	✓			Liaoning Xinming Instrument Transformer Co.,Ltd./China	Liaoning Xinming Instrument Transformer Co.,Ltd./China	Liling Huaxin Insulator Technology Cp.,Ltd./China
123 kV, 3150/2000 A, 40 kA GIS Main bus 3150 A Feeder 2000 A	ABB Huadian High Voltage Switchgear (Xiamen) Co., Ltd. / China	ELK-04	145	3150	40			✓	Pfiffner/Switzerland Sihui/China	Pfiffner/Switzerland Sieyuan/China	XD/China
	Hyundai Heavy Industries Co., Ltd. / Korea	145SP-1	123	3150	40	✓			Dongwoo/Korea	Nissin/Japan	LAPP/Germany
	Hyosung Corporation / Korea	HSG-144D	145	3150	40	✓			Hyosung / Korea	Nissin/Japan	LAPP/Germany
	New Northeast Electric Group High Voltage Switchgear Co., Ltd./ China	ZFW20-145	145	3150	40	✓			Liaoning Xinming Instrument Transformer Co.,Ltd./China	Liaoning Xinming Instrument Transformer Co.,Ltd./China	Liling Huaxin Insulator Technology Cp.,Ltd./China
ILJIN Electric Co., Ltd. / Korea	IJS 1440	145	3150	40	P			Samnung / Korea	Toko Takaoka Korea / Korea	Lapp / Romania	

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EGAT Accepted Disconnecting Switch List

Description	Manufacturer / Country	Type/Model
550 kV, 4,000 A air switch	Coelme / Italy	STC
	GE / Italy	S3CD550/4000
	Hapam / Netherlands	SSBIII-525
550 kV, 4,000 A, air switch with grounding blade	Coelme / Italy	STC-E
	GE / Italy	S3CDT550/4000
	Hapam / Netherlands	SSBIII-AM-525
245 kV, 4,000 A, air switch	Coelme / Italy	TCB
	GE / Italy	S3CD245/4000
	Hapam / Netherlands	SSBIII-245
245 kV, 4,000 A, air switch with grounding blade	Coelme / Italy	TCB-E
	GE / Italy	S3CDT245/4000
	Hapam / Netherlands	SSBIII-AM-245
245 kV, 3,150 A air switch	Coelme / Italy	TCB
	Hapam / Netherlands	SSBIII-245
	GE / Italy	S3C245/3150
245 kV, 3,150 A air switch with grounding blade	Coelme / Italy	TCB-E
	Coelme / Italy	TCB-E Special
	Hapam / Netherlands	SSBIII-AM-245
	GE / Italy	S3CT245/3150

EGAT Accepted Disconnecting Switch List

Description	Manufacturer / Country	Type/Model
123 kV, 3,150 A air switch	Coelme / Italy	TCB
	GE / Italy	S3C123/3150
	Hapam / Netherlands	SSBIII-123
123 kV, 3,150 A air switch with grounding blade	Coelme / Italy	TCB-E
	GE / Italy	S3CT123/3150
	Hapam / Netherlands	SSBIII-AM-123
123 kV, 2,000 A air switch	Coelme / Italy	TCB
	GE / Italy	S3C123/2000
	Hapam / Netherlands	SSBIII-123
123 kV, 2,000 A air switch with grounding blade	Coelme / Italy	TCB-E Special
	GE / Italy	S3CT123/2000
	Hapam / Netherlands	SSBIII-AM-123

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EGAT ACCEPTED MANUFACTURER LIST FOR PROTECTIVE RELAY

Description	Manufacturer / Country
Protective Relay	ABB / Sweden, Switzerland, USA
	GE / USA, Canada, Spain, UK
	SEL / USA
	Siemens / Germany
	Reyrolle / UK
	Toshiba / Japan, Vietnam
	Schneider Electric / France, UK
	ZIV / Spain
	INGETEAM / Spain
	NR Electric / China
	Mitsubishi / Japan
	Protecta / Hungary

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EGAT ACCEPTED MAIN RELAY LIST No.1

Description	Manufacturer	Accepted Type	Accepted Voltage Level			Notes
			500 kV	230 kV	115&69 kV	
Current Differential Protection	ABB	RED670 (*)	✓	✓	✓	
	GE	P543 (*)	✓	✓	✓	
		L90 (*)	✓	✓	✓	
	SEL	SEL-311L (***)	✓	✓	✓	
		SEL-411L (*)	✓	✓	✓	
	Siemens	7SD52 (***)	✓	✓	✓	
	Schneider Electric	P543 (**)	✓	✓	✓	
	Ingeteam	EF-LD (*)	✓	✓	✓	
NR Electric	PCS-931 (**)	✓	✓	✓		
Distance Protection	ABB	REL670 (*)	✓	✓	✓	
	GE	P443 (***)	✓	✓	✓	
		D30 (*)			✓	Only for three-pole tripping and line protection without carrier scheme.
		D60 (*)		✓	✓	
		ALPSDA1	✓	✓	✓	
	SEL	SEL-311C (***)			✓	Only for three-pole tripping and line protection without carrier scheme.
		SEL-421 (*)	✓	✓	✓	
		SEL-411L (*)	✓	✓	✓	
	Siemens	7SA522 (***)	✓	✓	✓	
		7SA6 series (***)	✓	✓	✓	
		7SA87 (*)	✓	✓	✓	
	Schneider Electric	P443 (**)	✓	✓	✓	
	Ingeteam	EF-ZT (*)	✓	✓	✓	
NR Electric	PCS-902 (*)	✓	✓	✓		

EGAT ACCEPTED MAIN RELAY LIST No.1

Description	Manufacturer	Accepted Type	Accepted Voltage Level			Notes	
			500 kV	230 kV	115&69 kV		
Distance Protection	Toshiba	GRZ200 (***)		✓	✓		
	ZIV	ZLV (***)		✓	✓		
Transformer Differential Protection	ABB	RET670 (*)	✓	✓	✓		
		RET650 (*)	✓	✓	✓	3-restraints	
	GE	P64x (*)	✓	✓	✓		
		T35 (*)		✓	✓		
		T60 (*)		✓	✓		
	SEL	SEL-387		✓	✓	4-restraints	
		SEL-487E (*)	✓	✓	✓		
		SEL-587			✓	2-restraints	
		SEL-787 (***)			✓	2-restraints	
	Siemens	Duobias (***)			✓	✓	
		7UT6 (***)	✓	✓	✓	5-restraints	
		7UT82 (*)	✓	✓	✓	2-restraints	
		7UT86 (*)	✓	✓	✓	3-restraints	
	Schneider Electric	P645 (**)	✓	✓	✓		
	Ingeteam	EF-TD (*)	✓	✓	✓	3-restraints	
	NR Electric	PCS-978 (*)	✓	✓	✓		
	Toshiba	GRT200 (***)	✓	✓	✓		
ZIV	IDV (***)	✓	✓	✓			
Mitsubishi	MRD-HA (***)			✓	3-restraints		
High Impedance Busbar Protection	ABB	REB650 (*)	✓	✓	✓		
	SEL	SEL-587Z	✓	✓	✓		
	Toshiba	GRB150	✓	✓	✓		

EGAT ACCEPTED MAIN RELAY LIST No.1

Description	Manufacturer	Accepted Type	Accepted Voltage Level			Notes
			500 kV	230 kV	115&69 kV	
Low Impedance Busbar Protection	ABB	REB670 (*)	✓	✓	✓	
		REB500	✓	✓	✓	
	GE	P746 (**)	✓	✓	✓	
		P740 (**)	✓	✓	✓	
		P747 (***)	✓	✓	✓	
		B90 (*)	✓	✓	✓	
		B30 (*)	✓	✓	✓	Only for breaker and a half, double bus double breaker or main and transfer bus arrangement.
	SEL	SEL-487B (*)	✓	✓	✓	
	Siemens	7SS52 (***)	✓	✓	✓	
		7SS60 (***)	✓	✓	✓	Only for breaker and a half, double bus double breaker or main and transfer bus arrangement.
		7SS85 (*)	✓	✓	✓	
	Schneider Electric	P746 (*)	✓	✓	✓	
		P740 (***)	✓	✓	✓	
	Toshiba	GRB100	✓	✓	✓	
	Mitsubishi	MBP-H1A (***)		✓	✓	In case of double bus single breaker arrangement, maximum 8 feeders with 1 bus coupler and 2 bus sections are allowed.

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EGAT ACCEPTED MAIN RELAY LIST No.1

Description	Manufacturer	Accepted Type	Accepted Voltage Level			Notes
			500 kV	230 kV	115&69 kV	
Breaker Failure Protection	ABB	REQ650 (*)			✓	
	GE	P141 (***)			✓	Only for 3-phase breaker failure function.
		P14Nx (***)	✓	✓	✓	
		C60 (*)		✓	✓	
		F60 (*)		✓	✓	
		SEL	SEL-501			✓
	Siemens	7VK6 series (***)	✓	✓	✓	
		7SJ82 (*)			✓	Only for 3-phase breaker failure function.
	Schneider Electric	P821		✓	✓	Only firmware version 1.F is accepted.
	Ingeteam	EF-ZT (*)	✓	✓	✓	
	NR Electric	PCS-9611 (*)			✓	Only for 3-phase breaker failure function.
	Toshiba	GRD200 (***)	✓	✓	✓	
ZIV	IRL (***)			✓	Only for 3-phase breaker failure function.	

Remarks

- (*) Applicable to IEC 61850 for both station bus and process bus with the certification specifying that the said relay conforms to "IEC 61850 edition 2 parts 6, 7-1, 7-2, 7-3, 7-4, and 8-1" and is issued by the third party laboratory.
- (**) Applicable to IEC 61850 for both station bus and process bus (no certification).
- (***) Applicable to IEC 61850 only for station bus.

Notes

1. The procedures for being listed in EGAT ACCEPTED MAIN RELAY LIST are specified in the EGAT's Pre-Qualification (PQ) process, of which the details can be provided by Transmission System Engineering Division on request.
2. If any types of relay in the list are planned to discontinue the manufacturing, the manufacturer or the representative is responsible for informing EGAT at least 1 year before the unavailable date.
3. The relays shall be configured to comply with all EGAT's required functions.



EGAT ACCEPTED MAIN RELAY LIST No.2

Description	Manufacturer	Accepted Type	Accepted Voltage Level				Notes
			500 kV	230 kV	115&69 kV	33&22 kV	
Directional Overcurrent Relay	ABB	REQ650 (*)	✓	✓	✓	✓	
	GE	P14Dx (***)	✓	✓	✓	✓	
		P841 (***)	✓	✓	✓	✓	
	SEL	SEL-351A (***)	✓	✓	✓	✓	
		SEL-451 (*)	✓	✓	✓	✓	
		SEL-751 (***)	✓	✓	✓	✓	
	Siemens	7SJ62 (***)	✓	✓	✓	✓	
		7SJ85 (*)	✓	✓	✓	✓	
		7SJ82 (*)	✓	✓	✓	✓	
	Schneider Electric	P141 (***)	✓	✓	✓	✓	
		P143 (***)	✓	✓	✓	✓	
	Ingeteam	EF-MD (*)	✓	✓	✓	✓	
		DA-PT (*)	✓	✓	✓	✓	
	NR Electric	PCS-9611 (*)				✓	None of line fault locator. Only use with feeder.
	Toshiba	GRE140 (***)	✓	✓	✓	✓	
GRD200 (***)		✓	✓	✓	✓		
ZIV	IRV (***)		✓	✓	✓		
Overcurrent Relay	ABB	REQ650 (*)	✓	✓	✓	✓	
	GE	P141 (***)	✓	✓	✓	✓	
		P14Dx (***)	✓	✓	✓	✓	
		P14Nx (***)	✓	✓	✓	✓	
		P841 (***)	✓	✓	✓	✓	
		F60 (*)	✓	✓	✓	✓	
		F650 (***)	✓	✓	✓	✓	
		SR350 (***)	✓	✓	✓	✓	

EGAT ACCEPTED MAIN RELAY LIST No.2

Description	Manufacturer	Accepted Type	Accepted Voltage Level				Notes
			500 kV	230 kV	115&69 kV	33&22 kV	
Overcurrent Relay	SEL	SEL-351A (***)	✓	✓	✓	✓	
		SEL-451 (*)	✓	✓	✓	✓	
		SEL-551	✓	✓	✓	✓	
		SEL-751 (***)	✓	✓	✓	✓	
		SEL-751A (***)	✓	✓	✓	✓	
	Siemens	7SJ61 (***)	✓	✓	✓	✓	
		7SJ62 (***)	✓	✓	✓	✓	
		7SJ85 (*)	✓	✓	✓	✓	
		7SJ82 (*)	✓	✓	✓	✓	
	Schneider Electric	P120	✓	✓	✓	✓	
		P122	✓	✓	✓	✓	
		P141 (***)	✓	✓	✓	✓	
		P143 (***)	✓	✓	✓	✓	
	Ingeteam	EF-MD (*)	✓	✓	✓	✓	
		DA-PT (*)	✓	✓	✓	✓	
	NR Electric	PCS-9611 (*)			✓	✓	Only for three-pole tripping.
	Toshiba	GRE140 (***)	✓	✓	✓	✓	
		GRD200 (***)	✓	✓	✓	✓	
ZIV	IRV (***)		✓	✓	✓		
	IRL (***)	✓	✓	✓	✓		
Synchronism Check Relay	ABB	REQ650 (*)	✓	✓	✓		Only product version 2.1 is accepted.
		SPAU140C	✓	✓	✓		
	GE	P841 (***)	✓	✓	✓		
		F60 (*)	✓	✓	✓		
		F650 (***)	✓	✓	✓		

EGAT ACCEPTED MAIN RELAY LIST No.2

Description	Manufacturer	Accepted Type	Accepted Voltage Level				Notes
			500 kV	230 kV	115&69 kV	33&22 kV	
Synchronism Check Relay	SEL	SEL-279H	✓	✓	✓		
		SEL-351A (***)	✓	✓	✓		
		SEL-451 (*)	✓	✓	✓		
		SEL-751 (***)	✓	✓	✓		
		SEL-751A (***)	✓	✓	✓		
	Siemens	7VK61 (***)	✓	✓	✓		
		7SJ85 (*)	✓	✓	✓		
		7SJ82 (*)	✓	✓	✓		
	Ingeteam	EF-MD (*)	✓	✓	✓		
		DA-PT (*)	✓	✓	✓		
	NR Electric	PCS-9611 (*)	✓	✓	✓		
	Toshiba	GRD200 (***)	✓	✓	✓		
Auto Reclosing Relay	ABB	REQ650 (*)	✓	✓	✓		
	GE	P841 (***)	✓	✓	✓		
		F60 (*)			✓		Only for three-pole reclose
		F650 (***)			✓		Only for three-pole reclose
		DRS			✓		Only for three-pole reclose
	SEL	SEL-279H			✓		Only for three-pole reclose
		SEL-351A (***)			✓		Only for three-pole reclose
		SEL-451 (*)			✓		Only for three-pole reclose
		SEL-751 (***)			✓		Only for three-pole reclose
	Siemens	7VK512 (***)	✓	✓	✓		
		7VK61 (***)	✓	✓	✓		
		7SJ82 (*)			✓		Only for three-pole reclose

EGAT ACCEPTED MAIN RELAY LIST No.2

Description	Manufacturer	Accepted Type	Accepted Voltage Level				Notes
			500 kV	230 kV	115&69 kV	33&22 kV	
Auto Reclosing Relay	Ingeteam	EF-ZT (*)	✓	✓	✓		Only for three-pole reclose
	NR Electric	PCS-9611 (*)			✓		
	Toshiba	GRD200 (***)	✓	✓	✓		
Overfluxing Relay	Ingeteam	EF-TD (*)	✓	✓	✓		
Frequency Relay	GE	P94Vx (***)	✓	✓	✓	✓	
		MIV		✓	✓	✓	
	SEL	SEL-351A (***)	✓	✓	✓	✓	
		SEL-451 (*)	✓	✓	✓	✓	
		SEL-751 (***)	✓	✓	✓	✓	
		SEL-751A' (***)	✓	✓	✓	✓	
	Siemens	7SJ85 (*)	✓	✓	✓	✓	
		7SJ82 (*)	✓	✓	✓	✓	
	Ingeteam	EF-MD (*)	✓	✓	✓	✓	
		DA-PT (*)	✓	✓	✓	✓	
	NR Electric	PCS-9611 (*)	✓	✓	✓	✓	
	ZIV	IRL (***)	✓	✓	✓	✓	
Under/Overvoltage Relay	GE	MIV		✓	✓	✓	None of VT input (open delta connection) for 59N.
		P94V (***)	✓	✓	✓	✓	
	SEL	SEL-351A (***)	✓	✓	✓	✓	
		SEL-751 (***)	✓	✓	✓	✓	
		SEL-751A (***)	✓	✓	✓	✓	
	Siemens	7SJ62 (***)	✓	✓	✓	✓	
		7SJ85 (*)	✓	✓	✓	✓	
7SJ82 (*)		✓	✓	✓	✓		

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EGAT ACCEPTED MAIN RELAY LIST No.2

Description	Manufacturer	Accepted Type	Accepted Voltage Level				Notes
			500 kV	230 kV	115&69 kV	33&22 kV	
Under/Overvoltage Relay	Schneider Electric	P141 (***)	✓	✓	✓	✓	
		P143 (***)	✓	✓	✓	✓	
	Ingeteam	EF-MD (*)	✓	✓	✓	✓	
		DA-PT (*)	✓	✓	✓	✓	
	NR Electric	PCS-9611 (*)		✓	✓	✓	Only for C-bank protection.
	Toshiba	GRD200 (***)	✓	✓	✓	✓	
	ZIV	IRV (***)	✓	✓	✓	✓	

Remarks

- (*) Applicable to IEC 61850 for both station bus and process bus with the certification specifying that the said relay conforms to "IEC 61850 edition 2 parts 6, 7-1, 7-2, 7-3, 7-4, and 8-1" and is issued by the third party laboratory.
- (**) Applicable to IEC 61850 for both station bus and process bus (no certification).
- (***) Applicable to IEC 61850 only for station bus.

Notes

1. The procedures for being listed in EGAT ACCEPTED MAIN RELAY LIST are specified in the EGAT's Pre-Qualification (PQ) process, of which the details can be provided by Transmission System Engineering Division on request.
2. If any types of relay in the list are planned to discontinue the manufacturing, the manufacturer or the representative is responsible for informing EGAT at least 1 year before the unavailable date.
3. The relays shall be configured to comply with all EGAT's required functions.



EGAT ACCEPTED MANUFACTURER LIST FOR FAULT RECORDING SYSTEM

Description	Manufacturer / Country
Fault Recording System	Qualitrol / UK
	Siemens / Germany
	Rochester / USA
	GE / USA
	ERL Phase / Canada

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EGAT ACCEPTED FAULT RECORDING SYSTEM LIST

Accepted Type	Manufacturer
IDM+ (***)	Qualitrol
M871	GE
7KE85 (*)	Siemens
TESLA 4000 (**)	ERL Phase
TR 2100	Rochester (RIS)

Remarks

- (*) Applicable to IEC 61850 for both station bus and process bus with the certification specifying that the said FRS conforms to "IEC 61850 edition 2 parts 6, 7-1, 7-2, 7-3, 7-4, and 8-1" and is issued by the third party laboratory.
- (**) Applicable to IEC 61850 for both station bus and process bus (no certification).
- (***) Applicable to IEC 61850 only for station bus.

Notes

1. The procedures for being listed in EGAT ACCEPTED FAULT RECORDING SYSTEM LIST are specified in the EGAT's Pre-Qualification (PQ) process, of which the details can be provided by Transmission System Engineering Division on request.
2. If any types of FRS in the list are planned to discontinue the manufacturing, the manufacturer or the representative is responsible for informing EGAT at least 1 year before the unavailable date.