

ELECTRICITY GENERATING AUTHORITY OF THAILAND

Supplemental Notice No. 1
Invitation to Bid No. NPUP-RX-01
Supply of 110 Mvar and 55 Mvar 500 kV Shunt Reactors
Transmission System Development in the area of Nan Phrae and Uttaradit provinces
for Power Purchase from Lao PDR Projects

The attached Supplemental Notice shall be considered as part of the bidding documents No. NPUP-RX-01.

As acknowledgement of receipt that all additions, deletions and revisions contained in this Supplemental Notice are incorporated into the above bidding documents, Bidder is requested to sign and return this acknowledgement via email address : jitpimon.pon@egat.co.th within three (3) days from the date of the announcement of this Supplemental Notice on <http://www4.egat.co.th/fprocurement/biddingeng/>.

The original acknowledgement which is manually signed in ink by a person or persons duly authorized shall be included in the proposal to be submitted on the bid opening date.

ELECTRICITY GENERATING AUTHORITY OF THAILAND

December 23, 2025

ACKNOWLEDGEMENT

This undersigned Bidder hereby certifies that the additions, deletions and revisions set forth in this Supplemental Notice to Invitation to Bid No. NPUP-RX-01 are incorporated as part of the above bidding documents and will be fully included in any bids which he may submit.

Signed _____

Title _____

Company _____

Date _____

ELECTRICITY GENERATING AUTHORITY OF THAILAND

SUPPLEMENTAL NOTICE NO. 1

INVITATION TO BID NO. NPUP-RX-01

SUPPLY OF 110 Mvar and 55 Mvar 500 kV SHUNT REACTORS

TRANSMISSION SYSTEM DEVELOPMENT IN THE AREA OF
NAN PHRAE AND UTTARADIT PROVINCES FOR POWER
PURCHASE FROM LAO PDR PROJECTS

The following supplemental information is hereby given for the above described Invitation:

1. Replace the Contents page with the revised page with (Rev.1) attached.
2. Section G : Ratings and Features
Replace pages G2-G7 of Ratings and Features with the revised pages with (Rev.1) attached.

Bid submitted must be in accordance with this Notice. Receipt of this Notice shall be acknowledged by the Bidder on the proposal included in the Bidding Documents in the space provided on page C3, Article C-7. Supplemental Notices.

ELECTRICITY GENERATING
AUTHORITY OF THAILAND

..December 23, 2025..

INVITATION TO BID NO. NPUP-RX-01
SUPPLY OF 110 Mvar and 55 Mvar 500 kV SHUNT REACTORS
TRANSMISSION SYSTEM DEVELOPMENT IN THE AREA OF
NAN PHRAE AND UTTARADIT PROVINCES FOR POWER
PURCHASE FROM LAO PDR PROJECTS
EGAT'S FUND

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**Shunt Reactor
Specification No. 731**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : via ECM System	Validated : via ECM System	Revision 0	Page 1/1
RF No. RX941A	Verified : via ECM System	Approved : via ECM System	Dated : 12/12/2025	

a. Type / Type of Cooling	3-phase, Oil Filled, Outdoor / ONAN		
b. Rated Frequency	50	Hz	
c. Highest Voltage for Equipment	550	kV	
d. Rated Voltage	525	kV	
e. Rated Power (3-Phase at Rated Voltage)	55	Mvar	
f. Winding Voltage Rating			
- Highest Voltage (High Voltage)	550	kV	
- Highest Voltage (Neutral)	145	kV	
- Lightning Impulse Withstand Voltage (High Voltage)	1,550	kV	
- Lightning Impulse Withstand Voltage (Neutral)	650	kV	
- Switching Impulse Withstand Voltage (High Voltage)	1,175	kV	
g. Bushing Voltage Rating			
- Highest Voltage (High Voltage)	550	kV	
- Highest Voltage (Neutral)	145	kV	
- Lightning Impulse Withstand Voltage (High Voltage)	1,550	kV	
- Lightning Impulse Withstand Voltage (Neutral)	650	kV	
- Switching Impulse Withstand Voltage, Wet (High Voltage)	1,175	kV	
h. Bushing			
- Material of Insulator	Porcelain		
- Creepage Distance of HV Side	≥ 13,750	mm	
- Creepage Distance of Neutral	≥ 3,625	mm	
i. Connection	Grounded Wye		
j. Audible Noise Level (Internal noise only without external accessories such as sound panels, sound enclosure, dampers, sound absorbers etc.)	≤ 74	dB(A)	
k. X0/X1 Ratio of Phase Reactor	1.0 (Tolerance ±2%)		
l. Temperature Class of Winding Insulation	120		
m. Winding Temperature Rise (Continuous at 105% Rated Voltage and Rated Frequency)			
- Average / Hottest Spot	≤ 60 / ≤ 75	°C	
n. Current Transformer			
High Voltage Terminal			
- Qty. per Phase	3		
- Accuracy Class	5P20, 20 VA		
- Continuous Thermal Current Rating Factor	1.0		
- Ratio	400/600 : 1 A		
Neutral Terminal			
- Qty. per Phase	2		
- Accuracy Class	5P20, 20 VA		
- Continuous Thermal Current Rating Factor	1.0		
- Ratio	400/600 : 1 A		
o. Max. Permissible Shipping Weight	120 tons		
p. Max. Permissible Shipping Dimension (W × L × H)	4.0 m × 10.0 m × 4.0 m (See Note 1)		
q. Applicable Standard	IEC 60076-6		

- Note : 1. Exception to the weight and dimension limitation stated in Article : Clearance and Weight Limitations of Section E : General Conditions of Contract.
2. Radiators shall be designed to be attached to the reactor tank. The radiator bank located on separated foundation from the reactor foundation is not acceptable.

**Shunt Reactor
Specification No. 731**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : via ECM System	Validated : via ECM System	Revision 0	Page 1/1
RF No. RX951A	Verified : via ECM System	Approved : via ECM System	Dated : 12/12/2025	

a. Type / Type of Cooling	3-phase, Oil Filled, Outdoor / ONAN	
b. Rated Frequency	50	Hz
c. Highest Voltage for Equipment	550	kV
d. Rated Voltage	525	kV
e. Rated Power (3-Phase at Rated Voltage)	110	Mvar
f. Winding Voltage Rating		
- Highest Voltage (High Voltage)	550	kV
- Highest Voltage (Neutral)	145	kV
- Lightning Impulse Withstand Voltage (High Voltage)	1,550	kV
- Lightning Impulse Withstand Voltage (Neutral)	650	kV
- Switching Impulse Withstand Voltage (High Voltage)	1,175	kV
g. Bushing Voltage Rating		
- Highest Voltage (High Voltage)	550	kV
- Highest Voltage (Neutral)	145	kV
- Lightning Impulse Withstand Voltage (High Voltage)	1,550	kV
- Lightning Impulse Withstand Voltage (Neutral)	650	kV
- Switching Impulse Withstand Voltage, Wet (High Voltage)	1,175	kV
h. Bushing		
- Material of Insulator	Porcelain	
- Creepage Distance of HV Side	≥ 13,750	mm
- Creepage Distance of Neutral	≥ 3,625	mm
i. Connection	Grounded Wye	
j. Audible Noise Level (Internal noise only without external accessories such as sound panels, sound enclosure, dampers, sound absorbers etc.)	≤ 74	dB(A)
k. X0/X1 Ratio of Phase Reactor	1.0 (Tolerance ±2%)	
l. Temperature Class of Winding Insulation	120	
m. Winding Temperature Rise (Continuous at 105% Rated Voltage and Rated Frequency)		
- Average / Hottest Spot	≤ 60 / ≤ 75	°C
n. Current Transformer		
High Voltage Terminal		
- Qty. per Phase	3	
- Accuracy Class	5P20, 20 VA	
- Continuous Thermal Current Rating Factor	1.0	
- Ratio	400/600 : 1 A	
Neutral Terminal		
- Qty. per Phase	2	
- Accuracy Class	5P20, 20 VA	
- Continuous Thermal Current Rating Factor	1.0	
- Ratio	400/600 : 1 A	
o. Max. Permissible Shipping Weight	150 tons	
p. Max. Permissible Shipping Dimension (W × L × H)	4.0 m × 10.0 m × 4.0 m (See Note 1)	
q. Applicable Standard	IEC 60076-6	

- Note : 1. Exception to the weight and dimension limitation stated in Article : Clearance and Weight Limitations of Section E : General Conditions of Contract.
2. Radiators shall be designed to be attached to the reactor tank. The radiator bank located on separated foundation from the reactor foundation is not acceptable.

**Neutral Reactor
Specification No. 731**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : via ECM system	Validated : via ECM system	Revision 0	Page 1/2
RF No. RX781A	Verified : via ECM system	Approved : via ECM system	Dated : 12/12/2025	

a.	Type / Type of Cooling	1-phase, Oil Filled, Outdoor / ONAN		
b.	Rated Frequency	50	Hz	
c.	Rated Voltage	123	kV	
d.	Rated Power	0.681	Mvar	
e.	Current Rating			
	- Continuous	18.45	A	
	- 10 Minutes	61.5	A	
f.	Winding Voltage Rating ⁺			
	- Highest Voltage (High Voltage)	123	kV	
	- Highest Voltage (Neutral)	24	kV	
	- Lightning Impulse Withstand Voltage (High Voltage)	650	kV	
	- Lightning Impulse Withstand Voltage (Neutral)	125	kV	
	- Switching Impulse Withstand Voltage (High Voltage)	-	kV	
g.	Bushing Voltage Rating ⁺			
	- Highest Voltage (High Voltage)	123	kV	
	- Highest Voltage (Neutral)	24	kV	
	- Lightning Impulse Withstand Voltage (High Voltage)	650	kV	
	- Lightning Impulse Withstand Voltage (Neutral)	125	kV	
	- Switching Impulse Withstand Voltage, Wet (High Voltage)	-	kV	
h.	Bushing			
	- Material of Insulator	Porcelain		
	- Creepage Distance of HV Side	≥ 3,075	mm	
	- Creepage Distance of Neutral	≥ 600	mm	
i.	Audible Noise Level (Internal noise only without external accessories such as sound panels, sound enclosure, dampers, sound absorbers etc.)	≤ 55	dB(A)	
j.	Neutral Reactor Zero Sequence Reactance (Xn)	2000	ohms	
k.	Temperature Class of Winding Insulation	120		
l.	Winding Temperature Rise (Continuous at 105 % Rated Voltage and Rated Frequency)			
	- Average / Hottest Spot	≤ 60 / ≤ 75	°C	
m.	Current Transformers			
	High Voltage Terminal			
	- Qty. per Phase	1		
	- Accuracy Class	5P20, 20 VA		
	- Continuous Thermal Current Rating Factor	1.0		
	- Ratio	400/600 : 1 A		
	Neutral Terminal			
	- Qty. per Phase	1		
	- Accuracy Class	5P20, 20 VA		
	- Continuous Thermal Current Rating Factor	1.0		
	- Ratio	400/600 : 1A		
n.	Surge Arrester, Station Class, Tank Mounted on High Voltage Side (RF SA7D11)			
	- Qty. per unit	1		
	- Voltage Rating	120	kV	
o.	Max. Permissible Shipping Dimension (W × L × H)	3.5 m × 8.0 m × 4.0 m (See Note 1)		
p.	Applicable Standard	IEC 60076-6		

**Neutral Reactor
Specification No. 731**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : via ECM system	Validated : via ECM system	Revision 0	Page 2/2
RF No. RX781A	Verified : via ECM system	Approved : via ECM system	Dated : 12/12/2025	

- Note : 1. Exception to the weight and dimension limitation stated in Article : Clearance and Weight Limitations of Section E : General Conditions of Contract.
2. The shunt reactor and neutral reactor shall be proposed from the same factory.
+ Base on 10 Minutes Current Rating.

**Neutral Reactor
Specification No. 731**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : via ECM system	Validated : via ECM system	Revision 0	Page 1/2
RF No. RX781B	Verified : via ECM system	Approved : via ECM system	Dated : 12/12/2025	

a.	Type / Type of Cooling	1-phase, Oil Filled, Outdoor / ONAN	
b.	Rated Frequency	50	Hz
c.	Rated Voltage	145	kV
d.	Rated Power	0.946	Mvar
e.	Current Rating		
	- Continuous	21.75	A
	- 10 Minutes	72.5	A
f.	Winding Voltage Rating ⁺		
	- Highest Voltage (High Voltage)	145	kV
	- Highest Voltage (Neutral)	24	kV
	- Lightning Impulse Withstand Voltage (High Voltage)	650	kV
	- Lightning Impulse Withstand Voltage (Neutral)	125	kV
	- Switching Impulse Withstand Voltage (High Voltage)	-	kV
g.	Bushing Voltage Rating ⁺		
	- Highest Voltage (High Voltage)	145	kV
	- Highest Voltage (Neutral)	24	kV
	- Lightning Impulse Withstand Voltage (High Voltage)	650	kV
	- Lightning Impulse Withstand Voltage (Neutral)	125	kV
	- Switching Impulse Withstand Voltage, Wet (High Voltage)	-	kV
h.	Bushing		
	- Material of Insulator	Porcelain	
	- Creepage Distance of HV Side	≥ 3,625	mm
	- Creepage Distance of Neutral	≥ 600	mm
i.	Audible Noise Level (Internal noise only without external accessories such as sound panels, sound enclosure, dampers, sound absorbers etc.)	≤ 55	dB(A)
j.	Neutral Reactor Zero Sequence Reactance (Xn)	2000	ohms
k.	Temperature Class of Winding Insulation	120	
l.	Winding Temperature Rise (Continuous at 105 % Rated Voltage and Rated Frequency)		
	- Average / Hottest Spot	≤ 60 / ≤ 75	°C
m.	Current Transformers		
	High Voltage Terminal		
	- Qty. per Phase	1	
	- Accuracy Class	5P20, 20 VA	
	- Continuous Thermal Current Rating Factor	1.0	
	- Ratio	400/600 : 1 A	
	Neutral Terminal		
	- Qty. per Phase	1	
	- Accuracy Class	5P20, 20 VA	
	- Continuous Thermal Current Rating Factor	1.0	
	- Ratio	400/600 : 1 A	
n.	Surge Arrester, Station Class, Tank Mounted on High Voltage Side (RF SA7D11)		
	- Qty. per unit	1	
	- Voltage Rating	120	kV
o.	Max. Permissible Shipping Dimension (W × L × H)	3.5 m × 8.0 m × 4.0 m (See Note 1)	
p.	Applicable Standard	IEC 60076-6	

**Neutral Reactor
Specification No. 731**



**Substation Electrical
Equipment Engineering Department**

Ratings and Features	Designed : via ECM system	Validated : via ECM system	Revision 0	Page 2/2
RF No. RX781B	Verified : via ECM system	Approved : via ECM system	Dated : 12/12/2025	

- Note : 1. Exception to the weight and dimension limitation stated in Article : Clearance and Weight Limitations of Section E : General Conditions of Contract.
2. The shunt reactor and neutral reactor shall be proposed from the same factory.
+ Base on 10 Minutes Current Rating.