E L E C T R I C I T Y G E N E R A T I N G A U T H O R I T Y O F T H A I L A N D
Nonthaburi
Thailand
Telex : 72348 EGAT TH
Fax : (662) 4336317

SUPPLEMENTAL NOTICE NO. 1

INVITATION TO BID NO. TIPN-TX-03

SUPPLY OF 300 MVA 230 kV POWER TRANSFORMER

TRANSMISSION SYSTEM IMPROVEMENT PROJECT
IN UPPER NORTHERN REGION TO ENHANCE SYSTEM SECURITY

The attached Supplemental Notice No. 1 shall be considered as part of Bidding Documents No. TIPN-TX-03

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 facsimile No. 0 2436 0294 or email address : procurement.tse@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

May 10, 2018
(Date of Authorization)

ACKNOWLEDGEMENT

This undersigned Bidder hereby certifies that the additions, deletions and revisions set forth in this Supplemental Notice No. 1 to Invitation to Bid No. TIPN-TX-03 are incorporated as part of the above Bidding Documents and will be fully included in any bid which he may submit.

Signed _____

Title _____

Company _____

Date _____

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

Section G : Ratings and Features

Replace pages G2 thru G4 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

May 10, 2018

a. Type	Auto-Transformer, 3 Phases, Core Type Outdoor, Oil Immersed	
b. Rated Frequency	50	Hz
c. Nominal System Voltage		
-HV Side	230	kV
-LV Side	115	kV
-TV Side	22	kV
d. Max. Continuous System Voltage		
-HV Side	242	kV
-LV Side	121	kV
-TV Side	24	kV
e. Cooling Class	ONAN / ONAF / ONAF	
f. Rated Capacity		
-HV Side	180 / 240 / 300	MVA
-LV Side	180 / 240 / 300	MVA
-TV Side	30 / 40 / 50	MVA
g. Rated Voltage		
-HV Side	230	kV
-LV Side	121	kV
-TV Side	22	kV
h. Insulation Level (BIL) of Winding		
-HV Side	900	kV
-LV Side	550	kV
-TV Side	150	kV
-Neutral	150	kV
i. Insulation Level (BIL) of Bushing		
-HV Side	900	kV
-LV Side	550	kV
-TV Side	150	kV
-Neutral	150	kV
j. Creepage Distance of Bushing		
-HV Side	≥ 6050*	mm
-LV Side	≥ 3025*	mm
-TV Side	≥ 600*	mm
-Neutral	≥ 280	mm
k. Connection of Windings		
-HV Side	Ground Wye	
-LV Side	Ground Wye	
-TV Side	Delta	
l. Voltage Vector Group of Winding		
-HV Side and LV Side	Yy0	
-LV Side and TV Side	Yd1	
-HV Side and TV Side	Yd1	

* Special Creepage Distance ; Base on 25 mm / kVmax. L-L

m. Positive Sequence Impedance at Rated Voltage
-HV Side to LV Side — Tap 8L / Tap N / Tap 12R
16.3%/ 16.5% / 17.5% (300 MVA Base)
-LV Side to TV Side — ≥ 11.0% (50 MVA Base)
-HV Side to TV Side — ≥ 11.0% (50 MVA Base)

n. Off Load Tap Changer — -

o. On Load Tap Changer (Base on Rated Voltage) — +10%, -15% on HV Side with 1.25% Step

p. Temperature Class of Winding Insulation — 120

q. Winding Temperature Rise when Carrying Max. Continuous Rated Capacity

-Average	≤ 60	°C
-Hottest Spot	≤ 75	°C

r. Average Audible Sound Pressure Level at Rated Voltage and Frequency

-Without Fan	≤ 74	dB(A)
-With Fan	≤ 76	dB(A)

s. Surge Arrester, Station Class, Tank Mounted;

HV Side (see detail in RF SA8Y11)		
-Qty. per Phase	1	
-Voltage Rating	192	kV
LV Side (see detail in RF SA7Y11)		
-Qty. per Phase	1	
-Voltage Rating	108	kV
TV Side (see detail in RF SA2D01)		
-Qty. per Phase	1	
-Voltage Rating	24	kV

t. Bushing Current Transformer

HV Side	-Qty. per Phase	1
	-Accuracy Class	C400
	-Ratio	100/200/300/400/500/600/800/900/1000/1200 : 5 A
LV Side	-Qty. per Phase	1
	-Accuracy Class	C400
	-Ratio	200/400/600/800/1000/1200/1600/1800/2000/2400 : 5 A
TV Side	-Qty. per Phase	3
	-Accuracy Class	C400
	-Ratio (Inside Delta)	400/800 : 5 A
	-Ratio (Outside Delta Core #1)	1500 : 5 A
	-Ratio (Outside Delta Core #2)	300/400/500/800/1100/1200/1500/1600/2000 : 5 A

u. Parallel Operation Requirement (between HV and LV side)
[ ] Not Required
[x] With Future Transformer or Each Other in the same Substation
[ ] With Existing Transformer in accordance with Dwg. No. _____ attached

v. Max. Permissible Shipping Weight — 150 tons (See Note1)

w. Max. Permissible Shipping Dimension	3.5 m × 10.0 m × 4.0 m (W×L×H) (See Note1)	
x. Limitation of Transformer Foundation		
-Foundation Plan Dimension	5.0 m ×8.0 m (W×L)	
-Max. Permissible Load (Total Weight of Transformer)	240	tons
-Max. Eccentric Distance of the Center of Gravity from the Foundation Plan's Center	210	mm
y. Max. Overall Dimension	-	
z. Applicable Standards	IEEE Std. C57.12	

Note :
1. Exception to the weight and dimension limitation stated in the article : Clearance and Weight Limitations.
2. The positive sequence impedance from HV side to LV side shall have a tolerance of ±5% of specified value.
3. Each transformer shall be considered as transformer No.1 of which provision shall be made for future parallel operation upto 4 transformers according to drawing No. TX4 "FOUR-TRANSFORMER PARALLELED OPERATION TYPICAL SCHEMATIC DIAGRAM" attached with the specification.
4. The transformer shall be designed to withstand the following fault occurrence rates with the expected transformer life of 25 years.

Current Intensity	Times/Year
100 %	1
50 %	20
20 %	100

Where the 100 % current intensity means the maximum value of the short circuit current.
5. Exception to the Specification. All bushing of the maximum line-to-ground voltage below 69 kV shall be solid type with cemented flange.