THE ISLAMIC REPUBLIC OF PAKISTAN

DETAILED DESIGN STUDY ON WEST WHARF THERMAL POWER PLANT PROJECT

FINAL REPORT-II
LOT 1 (VOLUME 2)

JANUARY 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

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THE ISLAMIC REPUBLIC OF PAKISTAN

ON WEST WHARF THERMAL POWER PLANT PROJECT

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TENDERER'S DATA SHEET

(UNIT 1)

SECTION I

POWER PLANT UNIT

SECTION-I: POWER PLANT UNIT

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	1.	GUARAI	NTEED PLANT PERFORMANCE	DU01~1
		1.1	AVERAGE NET PLANT HEAT RATE	DU01-1
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	Tend	derer's Data Sheet	1997年 -
ı.	POWER PLA	ANT UNIT	(Tenderer's Name)
1.		ed Plant Performance	the seaffly stage of the seaff
1.			
	1.1 Average net plant heat rate		
	(1)	Guaranteed average net plant heat rate (kcal/kWh)	or less
		(Weighted average of net plant heat rates)	
	(2)	Net plant heat rate (kcal/kWh)	
		at rated output (MW)	
	e de engle de	at 75% of rated output (MW)	er en engliste der eine er ein Eine er eine e
		at 50% of rated output (MW)	table engine to a common to the
	1.2 Maxi	mum Continuous Load	
		Generator output (kW)	
		Main steam pressure at turbine throttle (kg/cm ² g)	
		Main steam temperature at turbine throttle (°C)	
		Reheat steam temperature at reheat stop valve (°C)	
		Condenser pressure (mmHg abs.)	
	· .	Make-up water (%)	
		Power factor	
	1.3 Capa	bility (4/4 load)	
:		Generator output (kW)	
		Main steam pressure at turbine throttle (kg/cm ² g)	
		Main steam temperature at turbine throttle (°C)	
		Reheat steam temperature at reheat stop valve (°C)	

	Tenderer's Data Sheet		
			(Tenderer's Name)
	Condenser pressure	(mmHg abs.)	425
	Make-up water	(%)	. – Paleira Alliando actor de l La companya de la co
	Power factor		
1.4	Minimum Load		
	Generator output	(kW)	
	Main steam pressure turbine throttle	at (kg/cm ² g)	
	Main steam temperate at turbine throttle		
	Reheat steam tempera at reheat stop valve		
	Condenser pressure	(mmHg.abs)	
	Make-up water	(%)	
	Power factor		
1.5	Auxiliary Load (House Loa	ad)	e foreign Brown and the state of the foreign Brown and the state of th
	At rated output	(kW)	
	At 75% of rated out	out (kW)	
	At 50% of rated outp	out (kW)	
		· ·	· ·

September 1988 (1981)

and the second of the second of the

	Tenderer's Data Sneet		· ·	
			(Tenderer's	Name)
2.	Plant Starting Time			
		Cold start	Start after 8 hour shutdown	Start directly after MFT
	From light-off - Steam admission to turbine (min)			-
	Steam admission - Synchronizing to turbine (min)	<u></u>		
	Synchronizing - Full load (min)			·
-	Total time (min)			

SECTION 11

STEAM GENERATOR AND AUXILIARY EQUIPMENT

SECTION-II: STEAM GENERATOR AND AUXILIARY EQUIPMENT

			PAGE
II.	STEA	M GENERATOR AND AUXILIARY EQUIPMENT	DB01-1
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		10 C DOWED CONCUMPTION	DR105-1

		•		
		Tenderer's Data Sheet		(Tenderer's Name)
II.	STE	AM GENERATOR AND AUXILIARY	EQUIPMENT	getter og til statelig i en et et e
	Not	e: The Contractor shall g	uarantee the	e values with * marks.
1.	STEA	M GENERATOR		$(1,1,\ldots,p) \in \mathcal{C}(\mathbb{R}^n) \cap \mathcal{D}(\mathbb{R}^n)$
	(1)	Туре	• .:·	
	(2)	Manufacturer		
-	(3)	Number		
	(4)	Steam generating capacity at plant maximum load	(kg/h)	*
	(5)	Design pressure	(bar)	
	(6)	Design temperature	(°C)	
		Superheater outlet		
		Reheater outlet		
	(7)	Furnace release rate at maximum load		
		Note: Use the definition	of American	n Boiler Manufacturer's
		Association for th	e furnace re	elease rate.
		Heat available in the furnace	(kcal/h)	
		Heat absorbing surface	(m^2)	
		Furnace release rate	(kcal/h/m²)	
	(8)	Total weight (t)	approx.	
		Steam generator comple steel structure	te except (t)	
		Drum	(t)	
		Boiler supporting stee structure	1 (t)	

	Tenderer's Data Sheet	(Tenderer's Name)
(9)	Holding water capacity	garage and the second second of the second
	Normal operation (m^3)	
	Hydrostatic test (m ³)	
(10)	Maximum size for shipping (max. m)	A STATE OF THE STA
	Name of part	
(11)	Maximum weight for shipping (tons) approx.	
	Name of part	

A CONTRACTOR OF THE STATE OF TH

and the second of the second

Tenderer's Data Sheet

(13) Performance data of steam generator

(Tenderer's Name)

《 1886年 · 1887年 · 1888年 · 18844 · 18884 · 18884 · 18884 · 18884 · 18884 · 18884 · 18884 · 188							
Load	Dimension	Minimum Load	50%	75%	ECR	Capability	Maximum Load
Items		() MW	() MW.) MM	· ()) WW (
Steam generation	(kg/h)						
Drum pressure	(kg/cm^2g)						The second secon
SH outlet pressure	(kg/cm^2g)					1 1	
	(1, \(\pi\), 2\(\pi\)						
Who outlet pressure	(Kg/cm/g)					-	
Econ_inlet pressure	(kg/cm ² g)						
SH outlet temperature	(°C)		4,440				
RH outlet temperature	(0 ₀)						
Steam generator efficiency	 %						
Hoodwater temperature et					:		
Econ. inlet	(°C)						
Fuel oil consumption	 (kg/h)						
High calorific value	(Kcal/kg)						
Furnace liberation rate	$(kcs1/h/m^3)$						
Furnace release rate	$((kca1/h/m^2))$						
Air flow at AH Thiet	(kg/h)						
Alr Llow at AH Outlet	(Kg/n)						
Gas flow at AH inlet	(kg/h)						
Gas flow at AH outlet	(kg/h)						
Excess air	 %						
# C			- -	- -			
CO2 leaving steam generator	(%)						

Tenderer's Data Sheet

(Tenderer's Name)

Load		Minimum	è	6 11	<u>و</u> د	Capability	Maximum
Items		MW()	WM()	MW()	MM()	WM()	() WM
Feedwater flow	1 (kg/h)					i de la companie de l	
SH spray water flow	(kg/h)	Application of the second					
RH spray water flow	 (kg/h)						
l Gas temp. at furnace outlet	et (°C)						
Gas temp. at RH inlet			3 23 3 1				
 Gas temp. at RH outlet	(00)						
Gas temp. at Econ. inlet	(0 ₀)]						
Gas temp. at Econ. outlet	(2 ₀)						
Gas temp. at AH outlet	(0 ₀)						
Air temp. at FDF outlet	(3 ₀)]			-			
Air temp. at SCAH outlet	(2 ₀)						
Air temp. at AB outlet	(0 ₀)						
Number of burners in use							
Draft at FDF outlet	(mm 11 ² 0)						
Draft at wind box	1 (mm 11 ² 0)						
Draft at furnace							
Draft at Econ. outlet	(mm H ² 0)						2001
Draft at AH outlet	[(mm H ² 0)			A COLUMN TO THE TAXABLE PROPERTY OF TAXABL			
Draft at stack inlet	(mm H ² O)	A PRINCIPAL PRIN					
Solids in steam at SH out	utlet (ppm)						

Note: Steam generation shall be met completely with the throttle steam flow of steam turbine.

<u>Tende</u> 1	rer's Data Sheet	(Tenderer's Name)
(1.4)		(renderer s name)
	nteed performance data	
	Steam generator efficiency at ECR	**************************************
	Heat losses of steam generator at ECR (%)	
	Total	
	Heat loss due to heat in dry flue gas	
	Heat loss due to moisture in the fuel	
	Heat loss due to moisture from burning hydrogen	
	Heat loss due to moisture in the combustion air	
	Heat loss due to heat in atomizing steam	
	Heat loss due to the formation of carbon monoxide	
	Heat loss due to radiation and convection	
	Heat loss due to un-counting losses	
(b) S	Steam generating capacity	
	Plant maximum load (Kg/h)	* 12 mg m 2 g g g
	MCR (Kg/h)	*
(c) S	Steam pressure at H.P. turbine	inlet
	Maximum load	* kg/cm ² g ⁺ kg/cm ² g
	Capability	* kg/cm ² g [±] kg/cm ² g
	ECR	* kg/cm ² g ⁺ kg/cm ² g
	75% load	* kg/cm ² g ⁺ kg/cm ² g
	- DB01-5 -	

Tende	erer's Data Sheet	(Tenderer's Na	me)
	50% load	* kg/cm ² g ±	
		* kg/cm ² g [±]	
(d)	Steam temperature at H.P. turbine inlet	en de la companya de La companya de la co	
	Maximum load	* 538°C ±°C	·
	MCR	* 538°C ±°C	
÷	ECR	* 538°C ±°C	
	75% load	* 538°C *°C	
	50% load	* 538°C ±°C	
÷	Minimum load	±oc	
(e)	Steam pressure at I.P. turbine inlet		
	Maximum load	kg/cm ² g ±	kg/cm ² g
	MCR	kg/cm ² g ±	kg/cm ² g
	ECR	kg/cm ² g +	kg/cm ² g
	75% load	kg/cm ² g ±	kg/cm ² g
	50% load	kg/cm ² g +	kg/cm ² g
	Minimum load	kg/cm ² g ±	kg/cm ² g
(f)	Steam temperature at I.P. turbine inlet	en gereke en waarde verd	ener Se ^r
	Maximum load	*o_c +	
	MCR	* oC + oC	
	ECR	* OC + OC	2 1 g
	75% load	* OC 5 + 1 - 1 OC 5	
	50% load	*o_c ±o_c	٠.
	Minimum load	o _C <u>+</u> o _C	

	Tenderer's Data Sheet				
				(Tend	lerer's Name)
(15)	Furnace and boiler			·	in the second of
	Furnace surface	(m^2)	40.00	<u> </u>	
	Furnace volume	(m ³)	$(i_{i,j})_{i=1}^{k}$	·	
	Tube			Furnace	Boiler
	Diameter	(mm)			
	Thickness	(mm)	e Santa		n <u>1440a</u>
	Material			<u></u>	
	Header			Furnace	Boiler
	Diameter	(mm)			ensister i
	Thickness	(mm)	i e per es		
	Material	-			unter in direct terms
	Number		•		
	Manhole number and size	(mm)			X
(16)	Data for steam generator high pressure feedwater h bypass operation				i a mendera di selata di s
	Generator output	(MW)			
	Steam generation	(T/h)			Terrer de la companya del companya del companya de la companya de
	Main steam temperature turbine inlet	at (^O C)	Table 4		
	Reheat steam temperatu turbine inlet	re at (°C)			
	Boiler metal temperatu the most highest parts name (area)		J.S		
	Feedwater temperature economizer inlet	at the (°C)		, i table types Hermania George Star	and Tibertona in _p osition and property of the second sec
	Spray water flow	(T/h)		(SH)	(RII)
	- DBO	1-7			

	Tenderer's Data Sheet			Company of the Compan
				(Tenderer's Name)
(17)	Drum (steam drum)			
	Internal diameter	(mm)		<u> </u>
	Thickness	(mm)		
	Length	(mm)		
-	Material			
	Manhole size	(mm)	2 + 5 +	<u> </u>
	Number of thermocouple for metal temperature	s		
(18)	Economizer			
	Type (include supporting method)			
	Heating surface	(m ²)	. ":	
	Tube			
	Distance between tu tube	be and (mm)		
	Diameter	(mm)		OD
	Thickness	(mm)	•	e e o transperio de la competitación de la competitación de la competitación de la competitación de la competit La competitación de la competit
	Material			
	Header			and the second of the second o
	Number			
٠	Diameter	(mm)		OD 188
	Thickness	(mm)		garage guest fire to a greek of
	Length	(mm)		
	Material	ě		
	Manhole number and size	(mm)		
	Bypass line of econ	omizer	ŧ	Yes No

Te	Tenderer's Data Sheet						
			(Tenderer's Name)				
(19) Su	(19) Superheater and attemperator Type of superheater						
	Heating surface	(m ²)	Primary	Secondary Final			
	Radiant		<u> </u>				
	Radiant & convection	n .		<u></u>			
	Convection			<u> </u>			
	Tube		Primary	Secondary Final			
	Distance between tu and tube	be (mm)					
	Diameter	(mm OD)	·				
	Thickness	(mm)		•			
	Material						
	Header			± 11.500 €			
	Number						
	Diameter	(mm)	·	<u> </u>			
	Thickness	(nm)		<u> </u>			
	Material						
	Size of outlet conno nozzles (mm in nomi		: :				
en e	Spacer material			· · · · · · · · · · · · · · · · · · ·			
	Number of thermocouples metal temperature	s for		ered, order english <u>Vita participation</u>			
	Steam temperature contrange	rol					
	Attemperator			to the state of			

	Tenderer's Data Sheet		(Tenderer's Name)				
20)	Reheater and attemperator		A grant of the top of the				
	Type of reheater						
	Heating surface	(m^2)	Primary Secondary Final				
	Radiant						
	Radiant and convec	tion					
	Convection						
	Tube						
	Distance between to and tube	(mm) ipe					
	Diameter	(mm OD)					
	Thickness	(mm) :					
	Material						
	Header						
	Number	;					
	Diameter	(mm)	·				
	Thickness	(mm)	A				
-	Material		<u> </u>				
	Size of outlet connection nozzle (mm in nominal)		naman salah kacamatan di kacamat Kacamatan di kacamatan di kacama				
	Spacer material						
	Number of thermocouple metal temperature	es for	i daga sa katalah daga sa katalah sa katalah Katalah sa katalah sa				
	Steam temperature contrange	rol	name i komponista a programa i programa. Programa				
	Attemperator						
	Туре		August 1				
	Number		1 1864 (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
	Material						

	Tenderer's Date Sheet				
	All the second of the second of the second	(Tenderer's Name)			
	(21) Casing	Inner Outer			
	Material				
	Thickness (mm)	The same part of			
	Total number of inspection hole (peep hole) for steam generator				
	(22) Total number of valve				
	Safety valve number and type				
	Drum				
)	Superheater including PCV				
•	Reheater				
٠.	(23) Gas air preheater	and the state form to be used to be			
	Туре				
	Nanufacturer				
	Number				
	Total heating surface of gas side per set (m ²)				
	Speed (rpm)				
	Material and thickness (mm)	The March Harles			
)	Hot end	, <u>an</u>			
	Intermediate	inn inn			
	Cold end	<u>nm.</u>			
	Housing	<u>mm</u>			
	Weight complete (t/each)				

	Tenderer's Data Sheet		a seculation of a			
•		•	(Tenderer's	Name)		
(24)	Steam coil air preheater		•		. :	
	Type	-			_	
	Manufacturer	ian i				
	Number			. 11		
	Heating surface (each co	il) (m ²)	i de la composition de la composition La composition de la		<u>.</u> .	
	Number of heating section	n	<u> The House State</u>	<u>. 18 45</u>	v:1:: <u>←</u>	
	Tube	4.	a distribution di Prop	rigan e		
	Material	· •		<u> </u>	_	
	Diameter (mm OD)	90,		· · · · · · · · · · · · · · · · · · ·	_	
	Thickness (mm)	-	e digital			
(25)	Oil burners and igniters		A STATE OF			
	(a) Burner					
	Туре	-			_	
	Manufacturer		42		_	
	Number	-	o call of			
	Capacity (kg/	h each) /h each)				
	Heavy fuel oil	:				
	Warm-up gas	_		1		
	Pressure (kg/cin ² g)	engte og de			
	Heavy fuel oil	-	<u> </u>			
	Warm-up gas			19	- .	
	Atomizing steam		s vega ¹¹ , er		٠	
	Pressure (kg/cm ² g)		<u></u>		
	Capacity (kg/h each)	· · · · · · · · · · · · · · · · · · ·			
		and the second second	And the second s	*	4 1 2	100

	Tenderer's Data Sheet	
		(Tenderer's Name)
	Available viscosity of heavy fue oil at burner inlet	1
	Turn down ratio, each burner	
en e	Minimum number of burner in service at MCR	
	(b) Igniter	
	Type	
	Manufacturer	
	Number	
	Capacity (Nm ³ /h each)	
	Gas pressure (kg/cm ² g)	
	(c) Flame detector	er en
	Туре	
	Manufacturer	
	Number	
	(d) Burner valve	
	Туре	
	Manufacturer	
0	Number	
(26)	Soot blower	
	Туре	
	Manufacturer	
	Number	
	Superheater	1000年,1000年,1000年,1000年 1000年,1000年,1000年
	Reheater	
	Economizer	<u>kon tronom arkenlarite Strikterioor</u> Tananging
	Air preheater	
	η η Λ1 12	n variante de la companya de la comp La companya de la co
L.	- DB01-13 -	tigan tidak bilang bilang Bilang bilang bilan

	Tenderer's Data Sheet		
			(Tenderer's Name)
	Other		e <u>n di Berkerikan da baran bar</u>
	Steam requirement for retractable soot blowe	er elegi	
	Steam flow	(kg/h)	
	Steam pressure	(kg/cm ² g)	
	Steam temperature	(°C)	
	Control method		
(27)	Blow down tank		(A) (1) (1) (2) (2) (4)
(21)	Type		Teget upo
		Land Carlo	
	Number	(m ³)	
	Tank capacity		
	Design pressure	(kg/cm ² g)	
	Design temperature	(°C)	e en
(28)	Air and flue gas duct		
	(a) Air duct		
	Material		No. of the contract of the con
	Thickness	(mm)	
	(b) Flue gas duct		
	Material		
	Thickness	(mm)	
	Measures against corrosion		
	(c) Soot hopper		
	Material		<u>Lander de l'écht de l'éch</u>
	Thickness	(mm)	
(29)	Forced draft fan		FDF
	Type and Model No.		

Tenderer's Data Sheet		(Tenderer's Name)
Manufacturer Number		
Operating speed	(rpm)	
Capacity per set	(m ³ /min)	
Static pressure	(mmH ₂ 0)	2. (1. (1. (1. (1. (1. (1. (1. (1. (1. (1
Air temperature	(°C)	
Shaft horse power	(k\)	
Efficiency	(%)	The state of the s
Motor	ing and the second	The Tenderer shall indicate the motor specification in
		accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Noise at 1m distance;	dB(A)	<u> </u>
Weight	1:11	The wife period of
Rotor	(t/each)	
Motor	(t/each)	<u>, in the known of </u>
Complete	(t/each)	
(30) Gas recirculation fan or g	ras injecti	on fan test e twissel
Type and Model No.		
Manufacturer Number		
Operating speed	(rpm)	
Capacity	(m³/min)	
Static pressure	(mmH ₂ O)	of Carry States (1997)
Gas temperature	(°C)	
Shaft horse power	(kW)	
Efficiency	(%)	
- DB01	-15	

Te	enderer's Data Sheet	4	
			(Tenderer's Name)
	Motor	·	The Tenderer shall indicate the motor specification in accordance with sub-clause 10
		e de la companya de	of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	Noise	(dB)	
	Weight	100	
	Rotor	(kg/set)	
	Motor	(kg/set)	
	Complete	(kg/set)	<u> </u>
) ₁ B	oiler water circulating	g pump (If ne	cessary)
	Type		
	Manufacturer		
	Number		
	Operating speed	(rpm)	
	Capacity per set	(m ³ /min)	
-	Total head	(m) · . · · · · ·	
	Boiler water pressure	e (kg/cm ² g)	<u> </u>
	Boiler water temperature	(°C)	
	Shaft horse power	(kW)	
	Motor		The Tenderer shall indicate the motor specification in
			accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	Type of shaft seal		
	Material of seal		
	Seal water from		
	Material		
. •	Casing	inger og de	
	- DI	301-16 -	(aka mining mengangan pengangan pengangan pengangan pengangan pengangan pengangan pengangan pengangan penganga Banggarangan pengangan pengangan pengangan pengangan pengangan pengangan pengangan pengangan pengangan pengan

Tenderer's Data Sheet		(Tenderer's Name)
		(tenderer s name)
Impeller		
Shaft		
(32) Heavy fuel oil facilities	4	en in the transfer of the second
(a) Heavy fuel oil servic	e tank	
or on the second and the second s		
Nunber		
Capacity	(k1)	
		<u> </u>
Diameter	(mm)	
Height	(10m)	<u>r i vitad (1944) Alkandid.</u> Tarah
Thickness		
Bottom plate	(mm)	<u> </u>
Shell plate	(mm ₎	
Roof plate	(mm)	
Material	ing the state of t	
Number of courses		<u> </u>
Painting material	4 14 1	<u> </u>
Weight complete (kg) approx.	
Material and size of heating coils	(mm)	
Heating area per unit volume of the tank	(m^2/m^3)	
(b) Heavy fuel oil pump		
Type Manufacturer		
Number		
Capacity	(kg/h)	
Suction pressure	(m) (kg)	

Tenderer's Data Sheet	1.1	
		(Tenderer's Name)
Discharge pressure	(kg/cm ² g)	
Viscosity range	(cst)	
Shaft horse power	(kW)	AND MELLINES TO SEE AND
Motor	18 F	The Tenderer shall indicate the motor specification in accordance with sub-clause 10
		of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Speed	(rpm)	
Type of shaft seal	· 	
(c) Heavy fuel oil heater	. :	
Туре		
Manufacturer		
Number	٠.	
Heating surface	(m^2)	
Oil flow	(kg/h)	
Oil pressure	(kg/cm ² g)	
Steam flow	(kg/h)	
Steam pressure	(kg/cm ² g)	
Inlet oil temperature	(OC)	
Outlet oil temperature		
Temperature of condens	sate (^O C)	and the state of t
Material		
Tube		
Shell	· · · · · · · · · · · · · · · · · · ·	
Diameter x Thickness		
Tube	(mm)	X
Shell	(mm)	with the X was to be a

Tenderer's Data Sheet		(Tenderer's Name)
Fluid in tubes		
Heat transfer coefficient	(Kcal/m ² h ⁰ C)	
(d) Heavy fuel oil flo	w meter with S	trainer
an spiges det i ferende en fê		
Manufacturer		
Number	racing their ps	
Available flow ran	ge (K1/h)	
Accuracy	(%)	
Screen material an		
n series de la companya della companya della companya de la companya de la companya della compan	d lifesti	
33) Seal air booster fan	11 - 1 - 5	
Туре		
Manufacturer	- 1 to 3	
Number	Q	
Capaciy	(m ³ /min)	
Static pressure	(mmH ₂ O)	
Design temperature	(°C)	
Shaft horse power	(kW)	
Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
34) Flame detector and tele	vision camera	cooling air fan
Туре		
Manufacturer		
Number		
Capacity	(m ³ /min)	
Static pressure	(mnH ₂ 0)	
	B01-19 -	

.

Tenderer's Data Sheet		(m - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
		(Tenderer's Name	e)
Design temperature	(°C)	NAME OF THE PERSON NAME OF THE P	
Shaft horse power	(kW)		·
Motor		The Tenderer shall ind the motor specification accordance with sub-cla of "Electric Motor" in V of Tenderer's Data Si	n in ause 10 Clause
5) Steam generator suppor	ting steel st	ructure	
Туре			
Manufacturer			
Total weight	(kg) approx.		
Size of steel struc	ture	Boiler area AH a	area
Height	(m)		
Width	(m)		
Depth	(m)		
		N. W. C.	

1611	ierer's Data Sheet		(Tenderer's Name)
2. STEAM (CONVERTER SYSTEM		en de de la companya
(1) St	eam converter with dea	aerator	
	Туре	er en som en	
	Manufacturer	to the	
	Number	4 · · · · · · · · · · · · · · · · · · ·	
	Heating surface	(m ²)	
	Heating steam flow	(kg/h)	
	Maximum heating pressure	(kg/cm ² g)	
	Maximum heating temperature	(°C)	
	Heating steam drain (temp.	outlet (°C)	
	Secondary steam flow	(kg/h)	*
	Secondary steam pressure	(kg/cm2g)	<u> • • • • • • • • • • • • • • • • • • •</u>
	Feed water inlet temperature	(°C)	
	Weight complete (in	a dry) appro	
	Weight complete (in	n service) a	approx.
(2) St	team converter drain c	ooler	
en e	Type		
	Manufacturer		i de la companya de La companya de la co
	Number of set	14 14 14 14 14 14 14 14 14 14 14 14 14 1	41 Million (1997)
	Heating surface	(m ²)	
	Heating drain flow	(kg/h)	
	Heating drain inlet	(°C)	
	ही हिन्द्र अधिकारिक स्थापन स्थापन स्थापन है । इ.स.चे प्रकृतिक स्थापन स्थापन स्थापन स्थापन स्थापन स्थापन स्थापन		
	- DBO	2-1 -	

Tenderer's Data Sheet		
The state of the s		(Tenderer's Name)
Heating drain outle temp.	t (^O C)	
Heating drain outle pressure	t (kg/cm ² g)	
Feed water flow	(m ³ /h)	Name of Carlos
Feed water inlet te	mp. (OC)	
Feed water outlet to	emp. (^O C)	
Fluid in tubes		
Weight complete (in approx.	dry)	
Weight complete (in approx.	service)	
Steam converter condens	sate drain t	ank
Type		
Number of set	en e	
Size - Wide(m) x Lem Height(m)	ngth(m) x	xx
Capacity in normal operation	(m ³)	
Steam converter feed w	ater pump	
Туре		
Manufacturer		
Number of set		
Capacity	(m ³ /h)	en e
Suction head	(m)	
Discharge head	(kg/cm ² g)	
Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 1 of "Electric Motor" in Claus V of Tenderer's Data Sheet.

	erer's Data Sheet		(Tenderer's Name)
	Feed water maximum temp.	(°C)	
en e	Material		era e
	Casing	, 	
	Impeller	3	
	Shaft		
	Type of gland sea	. 4 (1)	
	Material of gland	seal	jaranin ili. Lihatan lihatan
(5) Pr	essure control valve	and level control	valve
	gradina di kalendari Kanadari	Heating steam P.C. valve	Steam drain Feed wate L.C. valve L.C. valv
	Type	a <u>na kalani kamana</u>	
	Manufacturer		
and the second s	Number of set		4.34.4
n i sept d Transport de la secolida	Maximum flow (m ³ /h)		
1000 (1000) A 1000 (1000) A 1000 (1000)	Minimum controlable flow (m ³ /h)		
	Material		
	Body	Nagroup \$	· 14 · 14 · 14 · 14 · 14 · 14 · 14 · 14
	Disc		
	en de la companya de La companya de la co		
	Seat	· · · · · · · · · · · · · · · · · · ·	486-8-3-4-26
	Stem		et gradiente
(6) Co	ntrol panel		
	Type		The state of the s
	Height x Width x Dept	th (m)	
			en e
	÷ DB02	2-3 - 1 3 7 3 7 1	

	Tenderer's Data Sheet		<u> </u>
			(Tenderer's Name)
. INST	RUMENT AIR SYSTEM		
(1)	Air compressor		
	Туре		
	Manufacturer		
	Number		
	Cylinder number x cylindiameter	nder (mm)	X
	Stroke	(mm)	
	Speed	(rpm)	
	Capacity (m ³ /min at fro	ee air)	radioya (a. 1905) e e e e e e e e e e e e e e e e e e e
.:	Suction pressure	(mm bar)	
	Discharge pressure	(kg/cm ² g)	
	Shaft horse power	(k₩)	
	Motor		The Tenderer shall indicate
		· .	the motor specification in accordance with sub-clause 1 of "Electric Motor" in Claus V of Tenderer's Data Sheet.
	Material		
	Frame and cylinder		
	Cross head		
	Piston		
	Piston ring	·	Const
	Connecting rod		
	Crank shaft		
	Valve seat		
	Valve plate		
	Valve place		
	VALVE CULIU		

Tenderer's Data Sheet		
a species of the trade of		(Tenderer's Name)
Weight approximate		
Compressor	(kg/each)	
Motor	(kg/each)	
Complete set	(kg/each)	
(2) After cooler	en e	
Туре		Mark Andrew State
Number		
Capacity (m ³ /min at f	ree airl	
Material	100 011,	
and the control of th		
Tube		
Shell Shell		
Diameter		
Tube	(mm OD)	
Shell	(mm OD)	
Thickness		
Tube	(mm)	
Shell	(mm)	<u> Artikalia da arti benar arti</u>
Length	(mm)	
Outlet air temp.	(°C)	
Outlet cooling water		
temp.	(°C)	
Weight complete (kg/e	ach) approx.	
(3) Air receiver		
Туре		
Number		
Capacity	(m ³)	
Dlameter	(man)	
nn	Λ2_2	
and the control of the property of the propert	03-2 -	

Tenderer's Data Sheet		
	÷	(Tenderer's Name)
Height	(mm)	
Design pressure	(kg/cm ² g)	
Material		
Shell thickness	(mm) / / / /	
Weight complete (kg)	approx.	
4) Air dryer	•	
Туре		
Manufacturer		the state of
Number		
Capacity (m ³ /min at fr	ee atr)	
Air pressure	(kg/cm ² g)	
Dimension	(18/ 5/11 8)	Automore
	(am)	
Height		
Width	(mm)	
Depth	(mm)	
Number of gas compresso	r	
Dew point of discharge air	(°C)	
Discharge air temp.	(°C)	
	h) approx.	
5) Pressure regulator and	arran	
air filter set		en e
Туре		
Manufacturer		
Air filter		
Туре		<u> </u>
Manufacturer		

	Tenderer's Data Shee	<u>t</u>	
	de de la competit de La competit de la competit de	•	(Tenderer's Name)
(6)	Control panel		
	Туре		<u> </u>
	Height	(mm)	4.24
	Width	(mm)	<u> </u>
	Depth	(mm)	
	Weight complete	(kg) approx.	
(7)	Divided package number	r for shipping	

		Tenderer's Data Sheet		
				(Tenderer's Name)
! .	SERVI	CE AIR SYSTEM		
	(1)	Air compressor		
		Туре		
		Manufacturer	<i>:</i>	
		Number		1.1
		Cylinder number x cylindiameter	nder (mm)	x - x - x - x - x - x - x - x - x - x -
		Stroke	(mm)	
		Speed	(rpm)	
		Capacity (m ³ /min at fi	ee air)	
		Suction pressure	(mm bar)	
		Discharge pressure	(kg/cm ² g)	· · · · · · · · · · · · · · · · · · ·
		Shaft horse power	(k\)	
		Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
•		Complete weight	(kg/set)	
	(2)	Inter cooler		
		Туре		
		Number		
		Capacity (m ³ /min at fre	e air)	
		Material		
		Tube		
		Shell		

	Tenderer's Data Sheet	-	(Tenderer's Name)
	Diameter x Thickness	•	
	Tube	(mm)	<u> </u>
	Shell	(mm)	X
	Outlet air temp.	(°C)	<u> </u>
	Outlet cooling water temp.	(°C)	
(3)	After cooler		
•	Type	-	
	Number	_	
	Capacity (m ³ /min at	free air)	
	Material	·	
	Tube	-	
	Shell	_	
	Diameter x Thickness		
	Tube	(wiii)	<u> </u>
	Shell	(mm)	<u> </u>
*	Outlet air temp.	(°C)	
(4)	Air receiver		
	Туре	· .	
•	Number	_	
	Capacity	(m ³)	
	Diameter	(mm)	
	Height	(mm) _	
	Design pressure	(kg/cm ² g)	
	Shell thickness	(mm)	

	Tenderer's Data Sheet		(Tenderer's Name)
(5)	Control panel		
	Туре		23 - 17
, .	Number	e sty	

	Туре	
e.	Manufacturer	
•	Number	e Merce de la Propinsión de la Companya de la Compa
	Capacity (max. 1/min)	
	Type of stroke adjustment	
	Range of adjustment (%)	to
	Discharge pressure (max. kg/cm ² g)	
e.	Connection size	
	Suction (mm)	and the grant 18 per
•	Discharge (mm)	
	Material	
	Cylinder Folker	
	Ball check	
	Ball seat	
	Plunger	mb - ma - 3 - ma - 1 - 2 2 - 2 4 - 2 3 4 -
	Motor	The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	Weight complete (kg/each) approx.	
	(2) Hydrazine solution tank	
		Diluted Concentrated
e de la companya de La companya de la co	Туре	
	Manufacturer	

Tenderer's Data Sheet			grafic ser <u>ios se</u>
		(Tenderer	's Name)
		Diluted	Concentrated
Number		<u></u>	
Capacity	(1)	**************************************	· ·
Size			- 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Inside diameter	(mm)		
Height	(mm)	· <u></u> 1/2	9 T
Thickness	(mm)		
Material			<u>. : . : .</u>
Measuring tank			
Capacity	(1)	<u> </u>	
Size (W x D x H)	(mm)		i.
Material	·		· ·
Number		<u> </u>	
•		Diluted	Concentrated
lland pump			· #
Number			. 1
Capacity	(1/min)		
Weight complete (kg/ea			
Phosphate solution pump			
Туре			
Manufacturer		-	
Number	. : .		
	ax. 1/min)	1	2
Capacity adjustment va			
Type of adjustment pro	4	<u> </u>	
Discharge pressure (ma	x. kg/cm²g)		

<u>Tenderer's Data Sheet</u>		(Tenderer's Name)
Motor	*	The Tenderer shall indicate the motor specification in
		accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Connection size		
Suction	(mm)	
Discharge	(mm)	
Material Cylinder Ball check		
Ball seat		
Plunger	and the second	
Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Weight complete (kg/ea	ich) approx	•
(4) Phosphate solution tank		
Туре		
Manufacturer	3 1 1	
Number	ed over	
Capacity	(1)	
Size		i de la composición del composición de la composición de la composición de la composición del composición de la composición de la composición de la composición del composición de la composición de la composición del composició
Inside diameter	(mm)	
Height	(mm)	
Thickness	(mm)	
Material		

Tenderer & Data Sheet		(Tenderer's Name)
Dissolving screen material		
Agitator		
Туре		
Number		
Speed	(rpm)	
Material		
Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Weight complete		
(kg/each)	approx.	the state of the s
(5) Ammonium solution tank		34.7
Type Manufacturer Number		
Capacity	(1)	
Size		
Inside diameter	(mm)	
Height	(mm)	Programme and the second secon
Thickness	(mm)	
Material		
(6) Ammonium dissolving equipm	nent	and the second of the second o
Dissolving method		
Conductivity meter	*	en e
Manufacturer		

Tenderer's Data Sneet	
Semana and a semana de semana and a semana a	(Tenderer's Name)
Number	T. 80 c. j
Range	
· · · · · · · · · · · · · · · · · · ·	**************************************
Pressure reducing valve	
Туре	
Reducing range	
Number	
Piping material	
(7) Ammonium solution pump	
Type	
Manufacturer	
Number	
Capacity (max. 1/min)	
Capacity adjustment variable	
Type of adjustment provided	
Discharge pressure	
(max. kg/cm ² g)	
Motor	The Tenderer shall indicate
	the motor specification in accordance with sub-clause 10
	of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Connection size	
Suction (mm)	
Discharge (mm)	
Material	
Cylinder	
OJIIIUGI	

	Tenderer's Data Sheet	e a light marria, et la traduction	
		(Tenderer's Name)	
	Motor	The Tenderer shall indicate the motor specification in	
		accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data	
		Sheet.	
	Weight complete (kg) approx.	3 1	
(8)	Control panel		
	Туре		
	Height (mm)		
	Width (mm)		
	Depth (mm)		
•	Weight (kg) approx.		
(9)	Chemical feed pump stroke controlle	er at CCR	
-	Туре		
	Manufacturer		
	Range		
	Number		
	Control System block diagram by No.	· · · · · · · · · · · · · · · · · · ·	
(10)	Electric power source	•	
	kW		
	Voltage		
	Phase		
(11)	Divided package number for shipping		

Tandayay'a Data Chaat	
Tenderer's Data Sheet	(Tenderer's Name)
6. SAMPLING RACK SYSTEM	en e
(1) Sampling rack	
Туре	
Manufacturer	y s <u>a nasa dina sa mina, na</u>
Number	
Analyzer	
рĦ	NAME OF THE PROPERTY OF THE PR
Туре	
Manufacturer	
Number Range	
Conductivity	
Type	
Manufacturer	
Number	
Range	
Dissolved oxygen	
Туре	
Manufacturer	
Number	
Range	
Hydrazine	a de la companya de La companya de la co
Туре	
Manufacturer	
Number	
Range	
- DB06-1 -	

	-				
	Teno	derer's Data Sheet		(Tenderer	's Name)
		Pressure reducing	valve		
	•	Туре		1 S.1	
		Material			
		Size of sampling	rack		
		Length	(mm)		·
		Width	(mm)		4011
		Height	(mm)		
		Weight complete	e (kg) approx.		
(2)	Reco	order and indicator		to a transfer of the	
				Recorder (Control room)	Indicator (Local)
	(a)	рН			
		Туре			. "
		Manufacturer	w.	and the	·
		Number			
		Number of pen			
		Range			·
	(b)	Conductivity			
		Туре			·
		Manufacturer			
	\$ 10 m	Number	÷	Management of the transport of the state of	
•		Number of pen	·		
		Range			
					and the second second

(

	4.	Tenderer's Data Sheet		(Tenderer	's Name)
	et e		t y y it i	Recorder (Control room)	Indicator (Local)
		(c) Oxygen and hydrazine			
		Туре	. 1 -	ing panggan sa panggan sa M <u>anggan sa panggan</u> sa	
·		Manufacturer	·	·	
		Number			
		Number of pen	·		
		Range			<u> </u>
)	(3)	Uni-sampler Type			
		Number	**		
		Manufacturer			terik arti ili
) approx.		
	(4)	Electric power source			e depte
		KW		· .	
		Voltage			
		Phase			
	(5)	Divided package number for shipping	Anger Son		
	(6)	Aut flow control valve	• • •		en e
		Туре		<u>41_1_</u>	<u> </u>
		Number			
		Manufacturer	1.74e		
		Power souce	, and		

	Tenderer's Data Sheet						
		to April 1990 in the Control of the		(Tende	erer's Name)		
7.	PIPI	NG FOR STEAM GENERATOR AN	ND AUXILIARY	EQUIPMENT			
	(1)	Auxiliary steam piping	·	Material	Size (mm)		
		From secondary superheat - HP auxiliary steam con					
		HP auxiliary steam control - HP auxiliary steam hea			e de la companya de l		
		From cold reheat pipe to auxiliary steam header) IIP		ti ti <u>kati k</u>	÷	
	(2)	Motor operating valves			12.4		+ *
			Soot blowing steam line	Burner atomi steam line	zing H.P. aux. steam line	i .	0
		Type of valve					
		Manufacturer					
		Pressure rating		<u></u>			
		Material					
		Number of valve					**
	(3)	Main steam piping					
		Material and size	(mm)			•	
		Design pressure	(kg/cm ² g)	<u>:</u>			
		Design temperature	(°C)		to word of the first first <u> </u>		
		Schedule (thickness)	(mm)				
		Calculation thickness	(mm)				
	(4)	Reheater inlet steam pig	oing		i se se		
	(-)	Material and size	(mm)	4.	n en er fylly ferhaget.		
		Design pressure	(kg/cm ² g)				
		Design temperature	(OC)				
		Schedule (thickness)	(mm)				
		Calculation thickness	(mm)		and the second s		

<u>Tend</u>	lerer's Data Sheet		-	/m3	- v.lo. Nome)	
				Tender	er's Name)	
(5)	Reheater outlet steam pipi	ıg				
٠.	Material and size	(mm)			·	
	Design pressure	(kg/cm ² g)			·	
	Design temperature	(oc)		· · · · · · · · · · · · · · · · · · ·	· · ·	
	Schedule (thickness)	(mm)				· · · · ·
	Calculation thickness	(mm)		10.00	je nama speta	
(6)	Turbine by-pass piping			+ 1 + 1 ₁ '		٠
		Th	ickness (mm)	Mater	ial Size	(mm)
	(a) Main steam to pressure) B				
	(b) Pressure control valve to attemperator	e . 		· · · · · · · · · · · · · · · · · · ·		
	(c) Attemperator to reheat	; 				
(7)	Automatic control valves or	ı H.P. tur	bine by	pass li	ne · · · · · · · · ·	
			On-off.	valve	Pressure trol val	
-	Type	· .		: :		
	Manufacturer					
	Number of set					
	Size	(mm)		·····		· · ·
•.	Maximum flow	(kg/h)				···
	Pressure control ()	kg/cm ² g)				
	Material	- -		. :		
	Body		:			·
	Disc				<u> </u>	
	Seat					

	Tenderer's Data Sheet				
		(Tenderer's Name)			
		On-off valve Pressure control valve			
	Stem				
	Noise (As a complete set) (dB (A))				
	Weight (kg) approx.	1 18 18 19 1 18 18 18 18 18 18 18 18 18 18 18 18 1			
(8)	Feedwater piping	and the graph of			
	Material and size (mm)	<u> </u>			
	Design pressure (kg/cm ² g)				
	Schedule (thickness) (mm)				
(9)	Chemical feed piping	Material Size (mm)			
	Diluted water pipe				
	Chemical feed pipe				
	For drum				
	For deaerator	<u> </u>			
	For condensate pump outlet				
(10)	Sampling piping	Material Size (mm)			
	Sampling pipe				

	has been been as	(Tenderer's Name)
8.	INSULATION FOR STEAM GENERATOR AND AUX	ILIARY EQUIPMENT
		Heat transfer Maximum coefficient allowable (kcal/mh ^O C) temperature (^O C)
	(1) Heat insulation material	
	Calcium silicate	
	Rock wool	
	Hard cement	
	Calcium silicate paste	
	Other materials ()	
	(2) Insulation material	
	Boiler drum	
	Header	
	Wall tube (Furnace)	The same Armania.
	Wall tube (Convection)	ranger in the section of the section
	Ceiling	
	Bottom	
	Air duct and wind box	
	Flue gas duct and soot hoppers	
	Steam coil air preheater	
	Air preheater	
٠		junta ja nagasaja kilonata junta ja naga ja kilonata. Barata
	Residual oil heater	

	<u>Tenderer's Data Sheet</u>		
		(Tenderer's Name)	
	Blow down tank	<u> </u>	
	Piping		
	Main steam		
	Turbine by-pass		
	Reheater inlet steam		
	Reheater outlet steam		
	Feedwater		
	Spray water		
	Residual oil		•
	Auxiliary steam		
	Drain vent and vent		
	Wash water		
(0)			
(3)	Description of safety insulation		
٠			
-			
ż			. (_
(4)	Lagging and jacketing	•	
	Material		
	Thickness (mm)		
(5)	Total weight of the insulation materials (ton) approx.		
			· ·

Tenderer'	s	Data	a S	sh	eet

(Tenderer's Name)

9. PAINTING FOR STEAM GENERATOR AND AUXILIARY EQUIPMENT

			Finished painting
(1)	Steam generator		
(2)	Drum	·	
(3)	Header		
(4)	Tube		
(5)	Casing (inner)		40
(6)	Casing (outer)		
(7)	Air duct		
(8)	Gas duct		
(9)	Forced draft fan		
(10)	Steam coil air preheater		
(11)	Air preheater		
(12)	Steel structure		· · · · · · · · · · · · · · · · · · ·
(13)	Heavy fuel oil and diesel oil service tank		
(14)	Heavy fuel oil pump	4 <u></u>	
(15)	Diesel oil pump	·	
(16)	Heavy fuel oil heater	· · · · · · · · · · · · · · · · · · ·	
(17)	Blow down tank		
(18)	Steam converter		
(19)	Steam converter drain tank		
(20)	Steam converter drain cooler		· · · · · · · · · · · · · · · · · · ·
(21)	Steam converter feedwater tank		· <u></u>
(22)	Steam converter feed water		

	Tenderer's Data Sheet	(Tenderer's Name)			
		Kind of paint Primary painting Finished painting			
(23)	GRF or GIF				
(24)	Boiler water circulating pump (if necessary)				
(25)	Insulated piping				
	and the second s				

(26) Uninsulated piping

	10. INS	TRUMENTATION	$\mathbb{E}_{\mu} \in \mathbb{F}_{\mu}^{1} \times \mathbb{F}$	
;	10.1 BO	ILER CONTROL SYSTEM		
	(1)	Туре		
	(2)	Signal range (From/to another system)	Analog	Degital
	(3)	Manufacturer, Model No.		
	(4)	Number		
	(5)	System cabinet	mark (in Article)	
		Dimension (mm) W x D x H	X	x 4. 4. 4. 7.
)		Grounding wire		
,		Anti-vibration rubber	Yes	No
	(6)	Transmitter & actuator type	·	Tug sept to the
	(7)	Control system block diagram with main interlock system by No.		
	(8)	Power supply system block diagram by No.		<u> </u>
· · · · · · · · · · · · · · · · · · ·	(9)	Outline arrangement of unit master man-machine communication device by No.		
))	(10)	Operating condition of digital control system	Temp.	o _C o _C
			Humidity	% - %
	(11)	Power source and consumption	DC	V W
			AC	VA V W
			Air	Nm ³ /min
	(12)	Control ability		
		Automatic control range	Yes	No

(Tenderer's Name)		Tenderer's Data Sheet	
		Control accuracy	
<u>No</u>	Yes	Pressure (less than ½2 kg/cm²)	
No	Yes	Temperature (less than ±5°C)	
		Drum level (less than +50 mm)	
No	Yes	or one-third of alarm range)	
No see	Yes	MTBF more than 10 ⁴ hours	(13)
		Troubleshooting equipment	(14)
No	Yes	Console	
No	Yes	CRT	
No	Yes	Hard copy	
No	Yes	Printer	
No	Yes	Manual stand by operating modules	
<u>No</u>	Yes	Online, off line maintenance	
No No	Yes Yes	Printer Manual stand by operating modules	

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	Tenderer's Data Sheet		· · · · · · · · · · · · · · · · · · ·
		(Tenderer'	s Name)
0.2 BU	RNER CONTROL SYSTEM		
(1)	Туре		
	Wired Ry on Degital	<u> </u>	
(2)	Signal range (From/to another system)		3.5
(3)	Manufacturer, Model No.		
(4)	Number		<u> </u>
(5)	System cabinet		
	Dimension (mm) W x D x H	<u>in kultura xan</u> tan dara	
	Grounding wire		
	Unti-vibration rubbers	Yes	No
(6)	Function		
- (0)	Boiler safety interlock system	Yes	No
4. 4	Burner management system	Yes	No No
			No.
	Remote/Local light off	Yes	
	Each burner control system	Yes	<u>No</u>
	Self diagnosis	· · · · · · · · · · · · · · · · · · ·	
(7)	Applied standard, code, regulation	NFPA or	· · · · · · · · · · · · · · · · · · ·
. (8)	MFT circuit power source		<u> </u>
(9)	Outline block diagram of each function by No.		
(10)	Outline composition of backup system for digital control system by No.		
(11)	Flame detector		
	Type, manufacturer		
	Ignition burner		
	Main oil burner		
	Main gas burner		
	- DB102-1 -		

	Tenderer's Data Sheet	See the Control of the Control of
		(Tenderer's Name)
(12)	Fuel trip valve type (oil)	
	Ditto (gas)	
(13)	Outline arrangement of central control console by No.	
(14)	Power supply system block diagram by No.	
(15)	Operating condition of digital control system	Temp. °C - °C
		Humidity % - %
(16)	Power source consumption	DC V W
		AC V W
		Instrument air N1/min
		Station air N1/min
(17)	MTBF more than 10 ⁴ hours	Yes No
(18)	Troubleshooting equipment	
	Console	Yes No
	CRT	Yes No
•	Hard copy	Yes No
	Printer	Yes No
	Manual stand by operating modules	Yes No
	Online-offline maintenance	Yes

	Tenderer's Data Sheet			
			(Tendere	er's Name)
10.3 SP	ECIAL INSTRUMENTS			and the second second
(1)	Heavy fuel oil flow meter (installed at FCV inlet)	÷		
	Type		Positive displa	acement
	Manufacturer, Model No.			
	Flow range	(K1/h)		
	Accuracy	(%)		r In Agenta (A)
	Calibrated by (Institute, laboratory)			t grand to the
	Manual printer (for used normal and perfo test)	rmance	Yes	<u>No</u>
	Aut-temp compensator		Yes	<u>No</u>
(2)	Heavy fuel oil tank level (installed at service tank			
	Type			
	Manufacturer, Model No.			<u> </u>
	Measuring range	(mm)		
	Minimum measuring unit	(mm)		
	Accuracy	(%)		
	Calibrated by (Institute laboratory)			de la companya de la La companya de la co
	(for used normal and perfotest)	rmance		
(3)	Natural gas flow meter			
	Type			
	Manufacturer, Model No.			
	Flow range Nm ³ /h			
	Accuracy	(%)		
	Calibrated by (Institute, laboratory)			
	- DB103	-1 -		

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	Tenderer's Data Sheet	e english of the control of the cont
	ISCELLANEOUS INSTRUMENTS AND CONTROL PPARATUS	(Tenderer's Name)
n	TTAKATOS	Manufacturer Two and model
		Manufacturer Type and model
(1)	Recorder	
•	Electric signal (V, mA etc.)	
	Temperature (for thermocouple, RTD)	<u> </u>
(2)	Indicator	
	Dial type	
	Vertical type	
(3)	Transmitter	
, ,	Pressure (Draft)	
	Temperature	
	Flow	
	Level	
	Analysis (conductivity, pH, etc.	
·	O ₂ , CO diss O ₂ /H ₂ Hydrazin gas-chromatograph) (if required)	
(4)	Controller	
	Pressure	
	Temperature	
	Flow	<u>and the state of </u>
	Level	
	Analysis (conductivity, pH, etc.)	
/ m \		
(5)	Switch	gradient werden begrecht der Steine der Geber
	Pressure (Draft)	
	Temperature	

Flow

Level

	Tenderer's Data Sheet	(Tenderer's Name)	
	and the second of the property of	Manufacturer	Type and model
	Limit switch		i i i i i i i i i i i i i i i i i i i
(6)	Local indicator		professional state of the second
	Pressure gauge	110 <u>2000 100 100 100 100 100 100 100 100 100</u>	
	Thermometer		
	Flow (positive displacement type)	· · · · · · · · · · · · · · · · · · ·	
	Flow (other)	. 44734.	
	Level	territorio de 1,600 de	n ann ing€ant Sa
(7)	Sight glass	in the second se	
	Sight flow		en de la companya de La companya de la co
	Level glass gauge		
(8)	Primary element		
	Thermocouple		The state of the second of the
. •	RTD	A Section of the section of	
	Thermo-well		
	Flow orifice		
	Flow nozzle		· · · · · · · · · · · · · · · · · · ·
	рН	· · · · · · · · · · · · · · · · · · ·	
	Hydrazin	· · · · · · · · · · · · · · · · · · ·	
	Conductivity		
	Diss O ₂ /H ₂ , gas-chromatograph		· · · · · · · · · · · · · · · · · · ·
(9)	Wind direction and speed sensor with recorder		
(10)	Control valve		
(11)	Manometer		
(12)	Thermocouple extension wire		
	- DB104-2 -		
	- pbiv4-2 -		

	Tenderer's Data Sheet	(Tender	er's Name)	
		Manufacturer	Type and model	
(13)	Control tubing	· · · · · · · · · · · · · · · · · · ·		
(14)	Flame viewing Color TV system	3	in the second of the	
	Camera with cooling equipment controller			
	CRT (14 inches)	·		• •
	Power consumption	(VA		
(15)	Electronic Boiler dram level gauge	system		
	Transmiter Vessel with drain valves			(
	Electrodes	· ·		
	Electronic Unit with integral display	in the second se	And the second second	
	Remote display unit			
	Power souce & Power consumption	(VA		

Tenderer's Data Sheet		(Tenderer's Name)
10.5 POWER CONSUMPTION		
(1) Instrument air	(Nm ³ /min)	
(2) Electric power		
AC 110 V	(VA)	
DC 220 V	(W)	

SECTION III

STEAM TURBINE AND AUXILIARY EQUIPMENT

SECTION-III: STEAM TURBINE AND AUXILIARY EQUIPMENT

			PAGE
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	1.4	TURNING EQUIPMENT	DT004-1
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	1.6	L.P TURBINE BYPASS SYSTEM	DT006-1
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	17.1	ELECTRO-HYDRAULIC GOVERNOR CONTROL SYSTEM	DT171-1

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17.2	TURBINE SUPERVISORY INSTRUMENT (TSI)	DT172-1
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17.4	MISCELLANEOUS INSTRUMENTS AND CONTROL APPARATUS	DT174-1
17.5	POWER CONSUMPTION	DT175-1

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process of contracts

III	. STEAM TURBIN			rollti	DMPNT		(Te	ndei	rer's	Name)	· · · · · ·
	The Contractor			1.1		marked	"*",			:	
1.	STEAM TURBINE						: :		* 1 1		
1.1	TURBINE				- 1			:	•		
	(1) Type							:		:	
	(2) Manufactu	rer									
	(3) Speed	1 - 1		(r	om)		1				
	(4) Number of	extrac	etion		: :						

Tenderor's Data Sheet

						10 m 2 m 2 m 2 m 2 m 2 m 2 m 2 m 2 m 2 m
(5) Performance data				÷	٥	(lenderer s name)
		Minimum	50% of rated load	75% of rated load	ECK	MCR load
Output	() () ()					*
Turbine-generator heat rate	(kcal/KWh)				*	
Steam pressure Main steam	(kg/cm ² g)				}	
Steam pressure RH steam	(kg/cm²g)					
Steam temperature Main steam	(0 ₀)					
Steam temperature RH steam	(00)				7. s	
Steam flow Main steam	(kg/h)				* * \(\).	
Steam flow RH steam	(kg/h)					
Exhaust steam pressure	(mmHg abs)					
Exhaust steam flow	(kg/h)					
Make up water	(%)					
Feedwater temperature at HP final heater outlet	(₂ ₀)					
Generator power factor				-	12 . I	
Generator short circult ratio	-					
Generator hydrogen pressure	(kg/cm ² g)					

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	Temperature (oC)															A See
srer's	Pressure (kg/cm2g) Temperat											1 · · · · · · · · · · · · · · · · · · ·				
	Flow (kg/h) Pre															
รมด				(KCW.)	(min)	(rpm)		(mm)	(mm)	(mm)	(mm)		(kg)	(kg)	(kg)	(kg)
Tenderer's Data Sheel Extraction steam conditions at turbine connections (at ECR) (not install neck heater in condenser)	Extraction n	No. 1 (to HP No. 7 heater) No. 2 (to HP No. 6 heater) No. 3 (to HP No. 5 heater) No. 4 (to deserator)	10 00 1-	Approximate minimum load at unit can operate satisfactorily for continuous	Time required for pick up from minimum load to maximum load	(9) Critical speed (Composition and each rotor)	(10) Dimension	Rotor length (each rotor)	Width (each turbine)	Turbine bearing span (each turbine)	Height of top above operating floor	(11) Weight (approx.)	Rotor (each rotor)	Upper casing (each casing)	Lower casing (each casing)	Assembled weight (each turbine)

	Tenderer's Data Sneet	(Tenderer's Name)
(12)	Length of last stage blade (mm)	- Constitution of Author
(13)	Annulus area of last stage blade	
(14)	Bearing	
	Туре	
	Number	
(15)	Thrust bearing type	
(16)	Material	
	Turbine rotor (each rotor)	
	Casing (each casing)	
	Blade (each blade)	
	Casing bolt (each bolt)	
	Steam chest	

	Tender's Data Sheet	(Tend	lerer's Name)
1.2	SPEED, LOAD CONTROL AND PROTECTION SYSTEM		
٠.	(1) EHC system type		
	(2) Control valve		
	Туре	ing sa	en en general de la designa. On en la composition de la designa de la
	Number		eskoro ta eskala
•	Material		
	(3) Load limitter	Yes	, No
	(4) Full-arc admission	Yes	, No
	(5) Main stop valve		
	Number		r de parti el deservir. La parti artico
	Size (mm)		
	Material of body and stem		
	(6) Combined reheat valve		
	Number		
. *	Size (mm)		
	Material of body and stem		
	(7) HP turbine exhaust check valve (if pro	ovided)	
	Number _		
	Size (mm)		
	Material of body and stem		
	(8) Emergency governor type		
	(9) Emergency trip device		
	Emergency governor		
	Thrust failure protection device	Yes	No
	Vacuum trip device	Yes	No
	Low bearing oil pressure		
	trip device	Yes	, <u>No</u>
	- DT002-1	3676	
		k + f M Vitalian (1997) January (1997)	

	Tenderer's Data Sheet	
		(Tenderer's Name)
	LP turbine exthoust temperature High trip device	Yes , No
(10)	Vacuum breaker	South & Barrier States
	Type and size	
(11)	Initial pressure regulator	Yes No
(12)	Atmospheric relief diaphragm	
	dia. x thickness (mm)	<u> </u>
	Material	
(13)	Turbine exhaust spray water flow (kg/h)	and the first state of the stat
(14)	Extraction steam reverse current valve size and rating	A DESCRIPTION OF THE SECOND OF
	Extraction number	Size (mm) Rating (kg/cm ²)
	No. 1	
	No. 2	
	No. 3	
	No. 4	
	No. 5	
	No. 6	
	No. 7	

s to per like a la carego (1886). Talignore de servicio en estrela el

			4	·	•
		Tenderer's Data Sheet			
		remerer & Dava Shoot	• • • • • •		(Tenderer's Name)
1.3		RICATING AND HYDRAULIC SYSTEM			
	(1)	Brand of using oil			
	(2)	Oil capacity of syste	m	(m ³)	
	(3)	Bearing oil circulati	on	(m ³ /h)	
	(4)	Bearing oil pressure		(kg/cm ² g)	
	(5)	Control oil pressure		(kg/cm ² g)	k k tayet
	(6)	Main oil tank			
		Type			
		Manufacturer		:	
		Capacity		(m ³)	
		Dimension		(mm)	<u>X</u> - X
		Material	2.5	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
		Weight complete	(kg)	approx.	
		Flow back oil		(m ³)	
	(7)	Main oil pump			
. "		Type	5	a de maria	<u></u>
		Manufacturer	,		
•		Capacity		(m ³ /h)	
		Discharge and suct pressure	ion	(kg/cm ² g)	
-		Material			
		Casing			
		Shaft			
		Impeller			
	- 112	Weight complete	(kg)	approx.	
					An Sheathar
			- DTO	03-1 -	

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	TEHUETEL S DALA SHEEL		
	Tenderer's Data Sheet		(Tenderer's Name)
(8)	Relay dump valve		
	Туре	•	
	Valve size	(mm)	
(9)	0il cooler		
	Type		
	Manufacturer		
	Number		
	Cooling surface area	(m ²) .	
	Cooling water inlet des temperature	ign (^O C)	
	Oil outlet temperature	(°C)	
	Cooling water flow	(m ³ /h)	
	Oil flow	(m ³ /h)	
	Tube size (outside diam x thickness)	eter (mm)	<u> </u>
	Design pressure	•	en e
	Tube side	(kg/cm ² g)	
	Shell side	(kg/cm ² g)	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	Heat transfer coeffi Kcal	cient /h/m ² /°C	
	Design temperature		
	Tube side	(°C)	
	Shell side	(°C)	
	Material	·	
	Tube	-	Code Code
	Shell	-	
	Water chamber	1.1141 <u>-</u>	
	Tube sheet (clad)		

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	Tenderer's Data Sheet		(Tenderer's Name)
	and Arthur George (1994), Carthur Santy Ann ann an Aireannach Ann an Aireannach	()	(Tenderer's Name)
	Dimension	(mm)	
	Weight (each) (kg)	approx.	
(10)	Auxiliary oil pump Type		
	Manufacturer	1	
	Number		4. 1.4. g (4. 1. g) (1. 4.1.
	Capacity	(m ³ /h)	
	Discharge pressure	(kg/cm ² g)	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	Speed	(rpm)	
	Material		
	Casing	gar an galif	
	Shaft		
	Impeller		
	Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause
	Weight complete (kg)	approx.	V of Tenderer's Data Sheet.
) (11)	Turning gear oil pump		
	Туре		
	Manufacturer		
	Number		
	Capacity	(m ³ /h)	
	Discharge pressure	(kg/cm ² g)	
	Speed	(rpm)	
	Material		
			on programme of the second of
	Casing		
	Casing Shaft		

	Tenderer's Data Sheet				tai. ja kijot:	
	201401010			(T)	'enderer's Name	e)
	Impeller		·			
	Motor		i seleti i di e	the motor accordance of "Elect	erer shall ind specification e with sub-claric Motor" in lerer's Data Si	n in ause 10 Clause
	Weight complete	(kg)	approx.			
(12)	Emergency oil pump				* <u></u>	
	Туре		1.1			
	Manufacturer		10 81 11 E		<u> </u>	<u></u>
	Number					· .
	Capacity		(m ³ /h)			· .
	Discharge pressure		(kg/cm ² g)			
	Speed		(rpm)			
	Material					
	Casing Shaft					
	Impeller		•		'enderer's Nam	e)
	Motor		48 (the motor	rer shall ind specification e with sub-claric Motor" in	n in ause 10
					erer's Data Sl	neet.
	Weight complete	(kg)	approx.			· · · · · · · · · · · · · · · · · · ·
(13)	Jacking oil pump (if p	rovi	ded)			÷
	Туре					
	Manufacturer					
	Number		a Terrina E	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
	Capacity		(m^3/h)		1 3 4 4 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	·

	renderer's Data Sheet		
			(Tenderer's Name)
	Discharge pressure	(kg/cm ² g)	
	Speed	(rpm)	
	Material Casing		
	Shaft		
	Plunger		the second of th
	Motor	ike (1)	The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause
\bigcirc			V of Tenderer's Data Sheet.
	Weight complete (kg)	approx.	• 3.134
:	(14) Oil conditioner	i en e	e Bede
	Type Manufacturer		
	Number		
	Capacity	(m ³ /h)	<u> 1888 - Literaturi da Afrika (</u>
	Dimension	(mm)	r <u>anda, en landa elikela</u>
	Weight complete (kg)	approx.	
	(15) Oil filter pump		e jaran kalendari da kalendari d
*****	Type		
	Manufacturer		
:	Number was a second	•	
	Capacity	(m ³ /h)	
	Discharge pressure	(kg/cm ² g)	
	Speed	(rpm)	
	Material Casing		
	The state of the s		a <u>anno 1985 ann an Airean</u> Marian an Carlos ann an Aireann a

Tenderer's Data Sheet	er Carren (14)	
	(Tenderer's Name)	
Shaft		
Impeller or gear	Approximation of the second se	
Motor	The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.	
Weight complete (kg) approx.		
) Vapor extractor for main oil tank Type		
Manufacturer		
Number		
Capacity (m ³ /h)	The second secon	
Motor	The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.	
Weight complete (kg) approx.	<u> </u>	
) Vapor extractor for oil conditioner	the second	
Туре		
Manufacturer		
Number		
Capacity (m ³ /h)	r a garage 19	
Motor	The Tenderer shall indicate the motor specification in	
	accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.	
Weight complete (kg) approx.		
) Turbine oil storage tank		

	Tenderer's Data Sheet		(Tenderer's Name)
	Management		(renderer's name)
	Manufacturer	(m ³)	
	Capacity		
	Dimension	(mm)	
	Material		
		approx.	
(19)	Oil transfer pump		
	Manufacturer		
	Number		
	Capacity	(m ³ /h)	
	Discharge pressure	(kg/cm ² g)	
	Speed	(rpm)	
	Material		
	Casing	•	
	Shaft		
	Impeller or gear		
	Motor		The Tenderer shall indicate the motor specification in
			accordance with sub-clause 1 of "Electric Motor" in Claus V of Tenderer's Data Sheet.
	Weight (kg)	approx.	
(20)	Oil Driven booster pump		
	Manufacturer		
	Number	:	
	Capacity	(m ³ /h)	
	Discharge pressure	(kg/cm ² g)	
	Speed	(rpm)	
	Material		
	Casing		
		03-7 -	
	÷ DTO	υ 3-7 -	

Tenderer's Data Sheet	e la company de la la la company de la compa
	(Tenderer's Name)
Shaft	<u> </u>
Impeller or gear	

<u> Tenderer's Data Sh</u>	eet	<u> </u>	<u> </u>
		(Ten	derer's Name)
1.4 TURNING EQUIPMENT			
(1) Type			<u></u>
(2) Turning speed	(rpm)		
(3) Motor			r shall indicate pecification in
	The second section of the sect	accordance	with sub-clause 10 c Motor" in Clause

V of Tenderer's Data Sheet.

		Tenderer's Data Sheet	•	
				(Tenderer's Name)
1.5	GLA	ND STEAM SEAL SYSTEM		
	(1)	Gland steam seal regulator		
		Туре		e <u>r i de la compania del compania del la compania del compania de la compania de la compania de la compania del compania de la compania del compan</u>
		Size		
		Regulating pressure	(kg/cm ² g)	
	(2)	Gland steam exhaust blower		
		Type		
		Manufacturer		
		Number		
		Capacity	(m ³ /h)	
		Exhaust pressure	(mmHg)	
		Speed	(rpm)	
		Material		
		Casing		
		Shaft		
		Impeller		
	·	Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
		Weight complete (kg)	approx.	
	(3)	Gland steam condenser		
		Туре		
		Manufacturer		
		Cooling surface area	(m^2)	
		Cooling water flow	(m ³ /h)	
-		Tube size and thickness	(mm)	

renderer s para sneer	
	(Tenderer's Name)
Number of tube	
Heat transfer coefficient (kcal/h/m²/°	3) <u></u>
Friction loss through tubes (kg/cm	n ²)
Dimension	
Total length (mm)	
Shell diameter (mm)	
Design pressure	
Tube side (kg/cm	n ² g)
Shell side (kg/cm	n ² g)
Design temperature	
Tube side (°C)	
Shell side (°C)	
Material	
Tube	
Shell	
Water box	
Tube sheet (clad type)	araka dinggan saken di sahar Alama. Tida <u>sahar sahar sahar sahar sahar</u>
Weight (kg) approx	
(4) Steam seal diverting valve	
Туре	
Manufacturer	<u> </u>
Number	

Tenderer's Data Shee	<u>t</u>	<u>to page alleger of the legislation</u>
San Jan San San San San San San San San San S		(Tenderer's Name)
1.6 L.P TURBINE BYPASS SYSTE	14	
(1) Bypass valve (LP)		
Туре		
Number	· · · · · · · · · · · · · · · · · · ·	
Manufacturer	-	
Size	in the second se	<u> </u>
Capacity	(kg/h)	gentanti kelik
Material	***	<u> </u>
Pressure control		Yes No
Start up	_ * * * * * * * <u>-</u>	use , no use
Actuater	•••	
Noise (as a compl	ete set) (dB (A))	
Weight	(kg) approx.	
(2) Control panel		
Туре		
Dimension	(mm)	
Watcht	(len) upprov	n januar salah

Tenderer's Data Sheet	(Tenderer's Name)
. SURFACE CONDENSER	
(1) Condenser	the after a received to the control of
Туре	en e
Manufacturer	
Performance data	
Design heat duty (kcal/	(h)
Design absolute pressure (mmHg ab	os.)
Heat transfer coefficient (kcal/h/m ² /	′°c)
Circulating water quantity (m ³ /h)	a de la compania de Compania de la compania de la compa
Circulating water inlet temperature (°C)	
Circulating water outlet tempeature (°C)	
Cleanliness factor (%)	
Condensate oxygen content (cc/lite	. #6 2 r) - <u></u>
Water velocity in tube (m/sec	:)
Friction loss through tube (kg/cm	2)
Total effective tube surface (m ²)	
Tube	
Effective tube length (min)	
Overall tube length (mm)	
Size and thickness (mm)	

Tenderer's Data Sheet	(Tenderer's Name)
Number of tube	(Tenderer a name)
Number of tube in air cooling zone	
Material	
Dimension	
	um)
Height (including neck)	
Overall width (m	un)
Material	
Shell	n de la companya de La companya de la co
Water box (with rubber	lining)
Tube sheet (clad type)	
Hot well	
	All the second of the second o
Tube support plate	
Metal thickness	
	un)
Water box (m	m)
Tube sheet (m	in)
	m) <u>se se s</u>
Hot well capacity (m	3)
Design pressure	
Water box and tube (k	g/cm ² g)
Shell (k	g/cm ² g)
Weight	
Empty (kg) ap	prox.
Operating (kg) an	

	Tenderer's Data Shee	<u>t</u>	(Tenderer's Name)
	Flooded	(kg) approx.	
	Divided package n		
(2)	Expansion joint for exhaust connection	turbine	
	Material		garanta da
	Thickness	(mm)	Antonia Particological de la companya de la
(3)	Butterfly valve		to de la companya de la servició de la companya de La companya de la co
	Type		Marine Company of the
	Manufacturer		
:	Number		
	Size	(mm)	
	Material (with ru		
(4)	Motor Weight Expansion joints for	(kg) approx.	The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	water piping inlet a	nd outlet	and the second of the second o
•	Type		
	Number		
	Size	(min) 1977 (see	<u> </u>
	Material		e <u>nsi Perusi nganggan nganggan nganggan</u> Tanggan nganggan
	Number of ply		
		- DT020-3 -	

		Tenderer's Data Sheet	
			(Tenderer's Name)
3.	AIR	EXTRACTION EQUIPMENT	
	(1)	Air extraction vacuum pump of condenser water box	Hogging Holding operation
		Type	
		Manufacturer	
		Number	
		Air suction capacity (kg/h)	
		Suction vacuum (mmHg abs.)	
		Speed (rpm)	
		Material	
		Casing	
		Rotor	
		Shaft	
		Air ejector (if applicable)	
		Motor	The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
		Water separation tank	
		Capacity (m^3)	
		Material	
		Weight (assembly) (kg) approx.	
	(2)	Starting air ejector (if applicable) condenser water box	of (##*1** 5#**)
		Туре	
	-	Manufacturer	
		Number	
		Air suction capacity (kg/h)	

<u>'enderer's Data Sheet</u>	and the second of the second o	<u> </u>	(Tenderer's Name)
Suction vacuum	(mmHg abs.)		
Operating steam pressure	(kg/cm ² g)		
Steam consumption	(kg/h) _	·	
Material			tari eta
Suction chamber	_		
Steam nozzle			
Weight	(kg) approx.		

		Tenderer's Data Sheet		and the second
			(Tendere	r's Name)
3A	(AIR	EJECTOR)		
	(1)	Steam jet air ejector with conde	nser	
		Туре	·	
		Manufacturer		
		Number		
		Air suction capacity (kg/h)	
		Suction vacuum (mmHg a	bs.)	
		Operating steam pressure (kg/c	π ² g)	+ ti
		Operating steam temperature	(°C)	
		Steam consumption (kg/h)	
		Condenser		
		Cooling surface area (m^2)) enser)	
		Tube size and thickness (wa) <u></u>	<u> </u>
		Tube length (mm)		
		Tube number		
		Heat transfer coefficient (kcal/h/m²,	/°C)	· .
		Design cooling water capacity (kg/h		
		Minimum cooling water capacity {kg/h) <u></u>	
		Friction loss through tube (kg/c	u ²)	
		Design pressure		
		Tube side (kg/cr	n ² g)	
		Shell side (kg/cr	1 ² g)	

			•
Tend	lerer's Data Sheet		teering of a first first section
1 1			(Tenderer's Name)
· r	Dimension		
	Overall length	(mm)	
	Shell diameter	(mm)	
Į Y	laterial		gar garaga
	Tube		
	Shell		<u> </u>
	Water box		
	Tube sheet		
	Suction chamber		<u></u>
	Steam nozzle		
W	eight (assembly) (kg) approx.)	<u> </u>
(2) Star	ting air ejector		ta egypti i familie egypti. Ta egypti i familie egypti egypti.
Т	ype	4. 月 日本	
M	lanufacturer		
N	lumber	na dia kacamatan di kacamatan di Kacamatan di kacamatan di kacama	
A	ir suction capacity	(kg/h)	
s	Suction vacuum	(mmHg abs.)	
	perating steam ressure	(kg/cm ² g)	
	team consumption	(kg/h)	
		(1.6/11)	
וע	laterial		
· · · · · · · · · · · · · · · · · · ·	Suction chamber Steam nozzle		and the following space
W		(kg) approx.	
"		CONTRACTOR	

	Tenderer's Data Sheet		(Tenderer's Name)
. CIRC	CULATING WATER PUMP		
(1)	Circulating water pump		
	Туре	: J.T.	
	Manufacturer		
	Number		<u> </u>
	Performance		
	Capacity	(m ³ /h)	
	Total head	(m)	
٠	Shut off head	(m)	
	Pump efficiency	(%)	<u> </u>
	Shaft horse power	(KW)	
	NPSH required	(m)	
	Speed	(rpm)	
	Dimension		
	Pump shaft length	(mm)	
	Pump shaft diameter	(mm)	
	Suction bell mouth diameter	(mm)	
	Discharge connection diameter	(mm)	
	Lubricating water system	I l	
	Water capacity	$(\mathfrak{m}^3/\mathfrak{h})$	
	Lubricating water pur	mp	Yes, No
	Material		
	Impeller	\$	
	Suction bell mouth an discharge ball	nd	

	renderer's pata Sn	eet						
			(Tenderer's Name)					
	Column and s	icharge elbow		. <u>:</u>				
	Shaft							
	Shaft enclos	ing tube						
	Bearing			·				
	Motor		The Tenderer shall indica the motor specification i	n				
			accordance with sub-claus of "Electric Motor" in Cl V of Tenderer's Data Shee	ause				
	Anode plate		Yes No					
	Weight							
	Pump	(kg) approx.						
	Motor	(kg) approx.						
	Assembly	(kg) approx.						
(2)	Discharge valve	partical extension. No final communication						
	Туре	i gwed eil oed Gweddod	· .					
	Manufacturer			<u> </u>				
	Number							
	Size	(mm)						
	Material (with	rubber lining)		<u> </u>				
	Motor		The Tenderer shall indica the motor specification i accordance with sub-claus	n e 10				
			of "Electric Motor" in Cl V of Tenderer's Data Shee					
	Weight	(kg) approx.						

(Tenderer's Name)
e de la Aria de la Caractería de la Cara
Allegania de la companya de la comp
<u> </u>
The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.

Te	nderer's Data Sheet			
	ATE PUMP		•	(Tenderer's Name)
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	ndensate pump	•		(1) ● F
es de la companya de	an Indiana a mada ka			
	· Type in Agrico (1944-195). History a poet statement (1964-1951).			
	Manufacturer			
	Number			
	Performance			e e kardi
	Capacity	(ton/h)		
	Total head	(kg/cm ² g)		
	Shut off head	(kg/cm ² g)		
	Pump efficiency	(%)	<u> </u>	
and the second of the second o	Shaft horse power	(KW)		
	NPSH required	(m)		
	Speed	(rpm)		
	Number of stage		·	e e e e e e e e e e e e e e e e e e e
	Connection size			
	Suction	(mm)		
	Discharge	(mm)		
	Dimension			
	Pit can depth	(mm)		
	Pit can diameter	(mm)		
	Material			
	Impeller		·	· · · · · · · · · · · · · · · · · · ·
	Casing			
	Shaft			
	Outer barrel			

Tenderer's Data Sheet		(Tenderer's Name)			
Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause of "Electric Motor" in Claus V of Tenderer's Data Sheet.			
Weight					
Pump	(kg) approx.	- 14			
Motor	(kg) approx.				
Assembly	(kg) approx.				
(2) Suction strainer Type					
Manufacturer					
Number	•				
Mesh					
Material					

Tender	er's	Data	Sheet

(Tenderer's Name)

6.	FEEDWATER	HEATER
υ.	FERDINIEN	11111111

(1)

	1 a 1	No.	1 llea	ater	• •	No.	2 H	eater
Туре				·		44. <u></u>		
Manufacturer								
Tube surface area						ing to the		
Condensing zone	(\mathfrak{m}^2)		<u></u>	<u> </u>	:	· 		
Drain cooling zone	(m ²) - 21 - 22 - 23 - 24 - 24 - 24 - 24 - 24 - 24	A <u>. 1.</u>	·	<u> </u>	٠.	: <u>1-1 .</u>	·	
Total	(m ²)			<u>.</u>		- <u> </u>	<u></u>	
Water velocity in tube	(m/sec)	: <u>: : :</u>	·		. :	<u> </u>		·
Friction loss through tube	(kg/cm ²)			· ·		<u> </u>	:	
Design water flow	(kg/h)						· 2 · · ·	
Heat transfer coefficien (kcal/	nt h/m ² /°C)	<u>:</u>						
Tube	No. of the	1 -			-	٠.		
Size and thickness	(mm)				·* :			
Number of tube			<u> </u>					
Number of tube pass		· · · · · · · · · · · · · · · · · · ·					<u></u>	
Dimension								
Overall length	(mm)				7: . ·	·	<u> </u>	· .
Shell diameter	(mm)					· <u></u>		
Shell thickness	(mm)			er ji tur				

Tenderer's Data Sheet		(Tender	er's Name)
			No. 2 Heater
Material	en e	and the state of	
Channel and channel	cover		
Shell			
Tube			ta tu sayaja
Tube sheet		<u> </u>	
Design pressure and tem	perature	est en la company	• ,
Tube side (kg/	cm ² g, °C)		
Shell side (kg/	cm ² g, ^o C)		
Design terminal tempera	ture (°C)		
Design drain cooler approach	(°C)		
Weight			
Empty (kg)	approx.		
Operating (kg)	approx.		and the second
Flooded (kg)	approx.		
		No. 3 Heater	ett i va
Туре			
Manufacturer			March Harris
Tube surface area		**	
Condensing zone	(\mathfrak{m}^2)		
Drain cooling zone	(m^2)		n pari n
Total	(m ²)		
Water velocity in tube	(m/sec)		
Friction loss through tube	(kg/cm ²)		
Design water flow	(kg/h)	. <u> </u>	

Tenderer's Data Sheet	TO SEE THE SECOND SECON
	(Tenderer's Name)
	No. 3 Heater
Heat transfer coefficient (kcal/h/m ²	² /oc)
Tube	
Size and thickness (wm	n)
Number of tube	
Number of tube pass	
Dimension	and the second of the second o
Overall length (mm	n)
Shell diameter (mm	
Shell thickness (mm	m) ^m in the second se
Material	
Channel and channel cove	e r ina an <u>a an an an an</u> an
Shell	
Tube Tube sheet	
Design pressure and tempera	aturo
Tube side (kg/cm ² g,	
Shell side (kg/cm ² g,	and the second s
Design terminal temperature difference (°C	e i de la companya d Di la companya de la
Design drain cooler approach (^O C	(c)
Weight	and provide the second of the
Empty (kg) app	prox.
Operating (kg) app	Prox.
Flooded (kg) app	prox.

enderer's Data Sheet		(Tenderer's Name)			e)	
igh pressure feedwater he	aters				·	
		No. 5	lleater	en e	No. 6	lleater
Type		: '				
Manufacturer					14 14	
Tube surface area	*			4.1		
Desuperheater zone	(m^2)			*:		
Condensing zone	(m^2)			* * 1		
Drain cooling zone	(m^2)					
Total	(m ²)					
Water velocity in tube	(m/sec)					
Friction loss through tube	(kg/cm ²)		· .		12.74	
Design feedwater flow	(kg/h)					
Heat transfer coefficie (kca	nt 1/h/m ² / ^o C)					
Tube						
Size and thickness	(mm)					
Number of tube	e e e e e e e e e e e e e e e e e e e	·	 ~			<u> </u>
Number of tube pass			:			
Dimension			: .:		:	are Ma
Overall length	(mm)				5,, 191	· · · · · · · · · · · ·
Shell diameter	(mm)			train to	<u>+ 1. 1</u>	
Shell thickness	(mm)				<u> </u>	- 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2
Material						
Channel and channel	cover				+	
Shell				teration e		

Tube

Tube sheet Design pressure and temper		Nο						
		no.	5	Heate	r	No.	6	lleate
Design pressure and temp								·
The Carrier of the Company of the Co	erature				ş .			
Tube side (kg/cm	² g, ^o C)			1	_			
Shell side (kg/cm	² g, ^o C)					V <u>. 1</u> 1		
Design terminal temperated difference	urė (^O C)			· .	-	1, 11		· ·
Design drain cooler approach	(oc)				- :: - ::			. 11
Weight	- 1 - 14							
Empty (kg)	approx.				_		· · · ·	
Operating (kg)	approx.				_			
Flooded (kg)	approx.			· ·		-		
				No	. 7	leate	er	
Type					<u> 11. s</u>	448	٠	
Manufacturer				- <u> </u>	<u> </u>	<u>.</u>	·	<u>:</u>
Tube surface area	•					• ;		
Desuperheater zone	$(\mathfrak{m}^2)^{\frac{1}{2}}$				<u> </u>			
Condensing zone	(m ²)	·	. :	<u> : , ` ,</u>		· 		:
Drain cooling zone	(m ²)				· ·	· . · .		· · · · · · · · · · · · · · · · · · ·
Total	(m ²)			, 1 1 1		· · · · · · · · · · · · · · · · · · ·	· ·	ul <u>Luu-</u>
Water velocity in tube	(m/sec)							3
Friction loss through tube	(kg/cm ²)		·			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
Design feedwater flow	(kg/h)			o, 		- : :	·,	

Tenderer's Data Sheet	(Tenderer's Name)
ng ng Makamaga Matanahan Managan	
	No. 7 Heater
Tube	
Size and thickness (mm) a market <u>a salat ya shi</u>
Number of tube	
Number of tube pass	
Dimension	en e
Overall length (mm	
Shell diameter (mm	
Shell thickness (mm)
Material	
Channel and channel cover	· <u> </u>
Shell	
Tube	
Tube sheet	
Design pressure and tempera	ture
Tube side (kg/cm ² , ^c	
Shell side (kg/cm ² , '	
Design terminal temperature difference (°C	
Design drain cooler approach	
Weight	
Empty (kg) app	ox. <u>an a win an with the books</u>
Operating (kg) app	
Flooded (kg) app	

	Tenderer's Data Sheet		(Tend	erer's Name)
(3)	Drain pump and drain tank	·		
		•	Pump	Tank
• .	Туре			
	Manufacturer			
	Number			
	Capacity	$(m^3/h, m^3)$		<u> </u>
	Discharge pressure	(kg/cm ² g)		
	Pressure (Maximum)	(kg/cm ² g)	i Projection	
•	Speed	(rpm)	<u> </u>	
	Material			
	Casing			
	Shaft	t age is	· · · · · · · · · · · · · · · · · · ·	
	Impeller			
	Motor		the motor sp accordance w of "Electric	shall indicate ecification in ith sub-clause 10 Motor" in Clause r's Data Sheet.

	<u>Tenderer's Name</u>		(Tenderer's Name)
7.	DEAERATOR		andre and the second of the se
	(1) Deaerating heater	e de la companya de l	
	Type		
	Manufacturer		
	Design capacity	(ton/h)	
	Oxygen content	(cc/liter)	A <mark>*</mark> North London State (1997)
	Dimension		The state of the s
	Overall length	(mm)	ing the state of t
	Diameter	(mm)	
	Shell thickness	•	
	Material	,	
	Shell		te vila
	Tray	•	
	Spray valve	en e	
	Design pressure	(kg/cm ² g)	
	Design temperature		
	Weight	. (•)	
	Empty	(kg) approx.	
	Operating	(kg) approx.	
	Flooded	(kg) approx.	
		(ug) upprox:	
	Relief valve		
	Туре	•	
	Manufacturer		
	(2) Storage tank	·.	
	Capacity at operation	ing (m ³)	

	The state of the s
	(Tenderer's Name)
	The second of th
(mm)	
(mm)	
(mm)	
and armore	
approx.	
approx.	
approx.	
	(mm) approx.

e kongr

1.435

The Control of the Co

(Tenderer's Name)

8.

BOILE	R FEED PUMPING EQUIPMENT		
(1)	Boiler feed pump (Motor d	riven BFP)	
	Туре		
	Manufacturer		
·	Number		A Commence of the Commence of
	Capacity	(ton/h)	
	Total head	(kg/cm ² g)	
	Discharge head	(kg/cm ² g)	
	Shut off pressure	(kg/cm ² g)	
	Feed water temperature	(OC)	
÷	Minimum flow	(ton/h)	
	Pump efficiency	(%)	
	Shaft horse power	(k₩)	
	Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	NPSH required	(m)	
	Noise (at a complete so	et) db(A)	
	Number of stage		
	Type of bearing		
	Type of seal		
	Type of coupling		
	Connection size		
٠	Suction	(mm)	
	Discharge	(mm)	

,	Tenderer's Data Sheet		n ang kalangan kang panghalan di Ang ang kang harang di
	Tenderer's Data Sheet	914 -	(Tenderer's Name)
•	Material		and the state of the
. : : .	Outer casing		
	Inner casing		
	Shaft	1472	
	Impeller	n de la companya de La companya de la co	
	Sleeve		
	Foundation		
	Minimum flow ori	fice	
.*		LI ICC	
	Warm-up orifice		
	Weight		en e
	Pump	(kg) approx.	
	Motor	(kg) approx.	
	Speed increasing	references	the second secon
	an agus a gear	(kg) approx.	
	Booster pump (if		
	necessary)	(kg) approx.	
	Assembly	(kg) approx.	
(:	2) Speed increasing gear	for motor driv	ven BFP
	Туре		
•	Manufacturer		
	Number of set		
* .	Type of bearing		
	Material		
	Casing		And the Art of the
	Drive gear		par intrologia (17. 17. 17. 17. 17. 17. 17. 17. 17. 17.
	The control of the factor of the control of		
	Driven gear		
	Bearing		Jan 194 tra distribution of Jan

Tenderer's Data Sheet		(mandamenta Nama)
		(Tenderer's Name)
Direct driven L.O. pum capacity	p	
Туре		er gewond day on the constraint of the constrain
Capacity	(m ³ /h)	
Discharge pressure	(kg/cm ² g)	
(3) Booster pump for motor dr	iven BFP	
Туре		
Manufacturer		9
Number		
Capacity	(ton/h)	
NPSH required	(m)	
Total pressure	(kg/cm ² g)	
Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
Connection bore of suction/discharge	(mm)	an an an terretagn jet a <u>a√amaga</u>
Gland type	•	
Material		4.58
Casing		<u> </u>
Impeller		tan in the same of
Shaft		
NPSH design data		
Vertical height bet deaerator lowest wa level and pump impe center	ter	
Piping head loss from deaerator outlet to feed pump inlet		

<u>Tend</u>	erer's Data Sheet		(Tendere)	''s Name)
	Available NPSH	(m)	·	
	Flow at feed pump inlet	(m ³ /h)		
	Pressure at feed pur inlet	np (kg/cm ² g)		
	Temperature at feed inlet	oC)		·: ·
	Suction pipe			
	Nominal bore x thickness	(mm)	XXX	
	Material			
(4) Suc	tion strainer			
	Гуре			<u> </u>
1	Manufacturer			
	Number of set			
	Strainer mesh		•	·
1	Material			••
	Casing and cover			·
	Strainer	•	<u> </u>	· · · · · · · · · · · · · · · · · · ·
(5) Rec	irculation control valv	⁄e		
	Type			
	lanufacturer			
	Number of set			
	low capacity	(m ³ /h)		
	Pluid temperature	(°C)		
	Iluid pressure	(kg/cm ² g)		
	laterial	(1.0)		
	Body			
	Bonnet			
	- DT080)-4		

renderer s baca sheet	•	(Tenderer's Name)
Disc	· · · · · · · · · · · · · · · · · · ·	
Seat	· · · · · · · · · · · · · · · · · · ·	
Stem		
(6) Orifice		
Type		
Number of set	-	
Flow	(m ³ /h)	
Inlet/Outlet pressure	(kg/cm ² g)	
Material	· .	

. •	Tenderer's Data Sheet	
9.	CLOSED CYCLE COOLING WATER SYST	(Tenderer's Name)
	(1) Bearing cooling water heat	exchanger
		Agrantian Company of Association (1997)
	Туре	
	Manufacturer	
	Number	
	Tube surface area	(m ²)
•	Water velocity in tube	(m/sec)
	Friction loss at design	n flow
	Tube side	(kg/cm^2)
		(kg/cm ²)
	Secondary cooling water flow	
	Primary cooling water flow (from CWP)	(m^3/h)
	lleat transfer coefficie (Kcal/	ent /h/m ² / ^o C)
	Secondary cooling water	temperature
	Inlet	(°C) <u> </u>
	Outlet	(°)
.• .	Primary cooling water d temperature (from CWP)	lesign
	Inlet	(°C)
	Outlet	(°C)
	Tube	
	Size and thickness	(nm)
	Yumber of tube	
	Number of tube pass	
٠	Anada nlata	Voc

Tenderer's Data Sheet	•	
		(Tenderer's Name)
Dimension		
Overall length	(mm)	
Shell diameter	(mm)	**************************************
Material		
Water box and cov	ver	
Shell		
Tube		
Tube sheet (clad)	± 1.	
Design pressure		
	(1/-2-x	445 E. 408
Tube side	(kg/cm ² g)	《春·夏·李春·王传》。 1967年 - 64、64
Shell side	(kg/cm ² g)	
Weight		
Empty	(kg) approx.	
Operating	(kg) approx.	
Flooded	(kg) approx.	the gradient was to the state of the
(2) Sea water auxiliary pum	ap	
Туре		
Manufacturer		
Number		
Performance		
Capacity	(m^3/h)	and the second of the second o
Total head	(kg/cm ² g)	
Shaft horse power		
Speed	(rpm)	

			•
	Tenderer's Data Sheet		Constitution of the Consti
	paska (A) 新原の (A) (A)		(Tenderer's Name)
	Connection size		(1967年) · 李龙大学 · 李龙
	Suction	(mm)	
	Discharge	(mm)	
	Material		in the s
	Casing		
	Impeller		
	Shaft		Secretary and
	Type of shaft seal	100	seemil in para set alka ja sala seemilised. Seelis
	Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	Dimension	(mm)	
	Weight (assembly)	(kg) approx.	
	Strainer		
	Туре		
	Manufacturer		
	Number		The term of the second
0	Mesh Material		
	Outer casing		
	Inner parts		4-34-5-1
	Lifting equipment		Yes

Tandanawia Data Chast			
Tenderer's Data Sheet		(Tender	er's Name)
(3) Bearing cooling water pu	mp	137.	
Туре			
Manufacturer			
Number			
Performance			
Capacity	(m ³ /h)	<u></u>	
Total head	(kg/cm ² g)		· · · · · · · · · · · · · · · · · · ·
Shaft horse power	(KW)	8-12-5-5	
Speed Connection size	(rpm)		
Suction	(mm)	<u> </u>	·
Discharge	(mm)	:	
Material			
Casing			English Committee
Impeller			
Shaft		<u> </u>	<u>, engage</u>
Type of shaft seal			
Motor	, •		ification in h sub-clause 10 otor" in Clause
Dimension	(mm)		2742241
Weight (assembly) (k	g) approx.	110000000000000000000000000000000000000	
(4) Chemical injection pump			
Type			
Manufacturer			
Number			

<u>Ter</u>	nderer's Data Sheet		(Tenderer's Name)
	Capacity	(1/min)	of the state of th
	Discharge pressure	(kg/cm ² g)	
	Material		
	Cylinder casing		
	Plunger		
	Motor		The Tenderer shall indicate
			the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
)	Weight	(kg) approx.	
(5) Cl	nemical solution tank		
·	Туре	et s	
	Number		
	Capacity		
	Material		
	Mixer		
	Туре		
	Material	_	The Charles of Charles
			The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	Weight	(kg) approx.	

Control of the second of the s

Tenderer's Data Sheet		or or make by the	
erina de la composition della	• •	(Tendere	r's Name)
10. MAKE UP WATER TRANSFER PUMP AND	D TANK		gradient system is a second
(1) Make up water transfer pum	ps		$\{\varphi_i : \varphi_i^* \in \mathcal{E}_{i,j} \mid i \in \mathcal{E}_{i,j}\}$
Туре	-	:	
Manufacturer			
Number	_		
Capacity	(m ³ /h)		
Total head on the second	(kg/cm ² g)	7.5.4	
Shaft horse power	(KW)		
Speed	(rpm)		
Connection			
Suction	(mm)		
Discharge	(mm)		
Material			10 10 10 10 10 10 10 10 10 10 10 10 10 1
Casing	-		e et. e 1.42
Impeller	_		
Shaft			
Type of shaft seal	-		
Motor	† 6	The Tenderer shathe motor speciaccordance with of "Electric Mo	fication in sub-clause 10 tor" in Clause
Dimension	(mm)		
Weight (kg)	approx.		
(2) Make up water tank			
Type	· <u>-</u>		
Manufacturer			
Number	· · · · · · · · · · · · · · · · · · ·		

		÷
Tenderer's Data Sheet		<u> </u>
	(Tende	rer's Name)
Capacity (m ³)	*	
Inside diameter (mm)		
Shell height (mm)	·	
Material and thickness	Material	Thickness (mm)
Wall plate	المراجع	
Bottom plate		
Roof plate		
Floating deck		
Air tight seal		
Vertical number of course		
Painting material		
Inner surface		
External surface		
Weight (kg) approx.		
Divided package number for		

Tenderer's Data Shee	<u> </u>	the district of the telephone
TUBE CLEANING EQUIPMENT		(Tenderer's Name)
Туре		
Manufacturer		
Number	er, i	
Automatic operation		
Ball	#	
Material		
Size	(mm)	
Number	· · · · · · · · · · · · · · · · · · ·	
Material		
	4 (
Recirculation pump	-	
Collector		
Ball injector nozzle		The state of the first section is
Ball distributor	rangan di salah di s Salah di salah di sa	
Screen	•	· · · · · · · · · · · · · · · · · · ·
Casing	. · · · · · · · · · · · · · · · · · · ·	Harris All Committee Commi
Element		
Piping (within Strai	ner)	
Control panel	_	
Туре	(
Size	(mm) approx	
Weight (assembly)	(kg) approx	
Weight (assembly)	(kg) approx	Yes No

<u>Tenderer's Data Sheet</u>	(Tenderer's Name)
2. TURBINE CLEAN DRAIN TANK	,
(1) Drain tank	
Туре	
Number	
Manufacturer	
Capacity (m ³)	
Size	
Length	
Width	
Height	
Material	<u> 1948 billion - Francisco Boltonia (m. 1948)</u>
Weight empty (kg) approx.	
flooded (kg) approx.	
(2) Condensate return pump	
Туре	
Number	
Manufacturer	
Performance	
Capacity (ton/h)	
Total head (mAq)	
Pump efficiency (%)	
Shaft horse power (kW)	
NPSH required (m)	

Material		(Tend	erer's Name)	
Impeller				
Casing				
Shaft				
Motor	. **	the motor sp accordance w of "Electric	shall indicate ecification in ith sub-clause Motor" in Claur's Data Sheet.	10 se
Weight			And the second	
Pump	(kg) approx	. •	11,11	
Motor	(kg) approx		Migraph .	
Assembly	(kg) approx		g strogger	

	Tenderer's Data Sheet		atteless.		1.
	Company of the State of the Sta		(Ten	derer's Name)	i
13.	DEBRIS FILTER (ALATERNATIVE)	vertical sections.		E ⁿ	er de La en es
	Type				· · · · · · · · · · · · · · · · · · ·
	Manufacturer				
	Material		Albania de la compansión de la compansió		
	Body		91.4 L T		
	Punched plate	•			
	Expanded Arear (punched plate area)	in take			
	Number				
	Dimention	(mm)			
	Inlet/outlet pipe size	(mm)		<u> </u>	
	Washing Valve				
	Type (Motor driven)		<u>,</u>	<u> </u>	
	Valve size	(mm)			
	Anode plate		Yes	<u> </u>	

	Tenderer's Data Sheet	化二甲基甲基甲基甲基甲甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲基甲	
		(Tendere	er's Name)
14.	PIPING FOR STEAM TURBINE AND AUXILIARY EQUIPMENT		
	(1) Steam turbine	Material	Size (mm)
	Turbine lead piping		
	Lubricating oil piping		
	Gland steam seal piping		
	Turbine drain piping		
	(2) Steam turbine auxiliary equipment	Material	Size (mm)
	Make up water piping system		
	Supply		Tere in tereballs
-	Return	<u> </u>	r. <u></u>
	Condensate piping system		
	Condensate pump suction	• + + + + + + + + + + + + + + + + + + +	
	Condensate pump - Deaerator		
	Boiler feed water piping system		
	BFP Suction		
	BFP - Feed water control valve		
	Feedwater control valve - final HP heater outlet	.· .·	

BFP minimum flow

enderer's Data Sheet	(Tenderer's Name)
	(lenderer s name)
Circulating water piping system	Material Size (mm
Each circulating water pump discharge	
Circulating water pump discharge common header	
Underground installation	
Condenser inlet and outlet	
Priming vacuum piping system	
Condenser air extraction piping system	
Condenser - air extraction pump	
Starting air ejector exhaust pipe	
Bearing cooling water piping systematical	
Main (supply, return)	
Stand pipe	
Circulating water pump motor cooling	
Primary cooling water piping system	orana kalendari katolika di Salaharan 1962. Perupahan di Salaharan 1962 di Salaharan 1962. Perupahan di Salaharan 1962, penjanjan beragai kalendari kendalan di Salaharan 1962.
Bearing cooling water heat exchanger supply	
Return	

Tenderer's Data Sheet	<u> </u>		
	(Tenderer's Name)		
and the state of t	Material Size (mm)		
Extraction steam piping system	Service of the state of the service		
No. 1 extraction			
No. 2 extraction			
No. 3 extraction			
No. 4 extraction	<u> </u>		
No. 5 extraction			
No. 6 extraction			
No. 7 extraction			
pressure auxiliary steam header) Air ejector supply			
Steam seal supply			
Deaerator supply			
Feedwater heater drain and vent piping system	englasi in disebesah di kecamatan di kecamatan di kecamatan di kecamatan di kecamatan di kecamatan di kecamata Kecamatan di kecamatan di kecama		
No. 7 HP heater drain			
No. 6 HP heater drain			
No. 5 HP heater drain			
No. 3 LP heater drain			
No. 2 LP heater drain	·····································		
No. 1 LP heater drain			
HP heater vent			
LP heater vent			
TI HOUVE I VIII			

. 	enderer's Data Sheet	(Tenderer's	s Name)
			O
		Material	Size (mm)
	Service air piping system		
	Instrument air piping system		
	N ₂ gas injection piping system		
	Seal water piping system	· · · · · · · · · · · · · · · · · · ·	
	Condenser tube cleaning water	184	
	Make up water piping		
(3) To	emporary piping		
	For turbine lubricating oil flushing		
	For hydrostatic test		
	For water flushing	<u> </u>	
	For trial operation of auxiliary equipment		
S1	otal weight of piping for team turbine and auxiliary	en e	
eo	quipment (ton) approx		
			epris e
		n sain ne la rige	
		en e	

Tenderer's Data Sheet	大品的 化氯化铵 医二氏性结束体管		
TORROTO DAVIDA	(Tenderer's Name)		
15. INSULATION AND LAGGING FOR STEAM TURBINE AND AUXILIARY EQUIPMENT			
(1) Heat insulation material	Heat transfer Maximum coefficient allowable (Kcal/mH ^O C) (OC)		
Calcium silicate			
Rock wool			
Hard cement	<u> </u>		
Calcium silicate paste			
Other material ()			
(2) Insulation material	en de la companya de La companya de la companya del companya de la companya del companya de la c		
Turbine casing			
Feedwater heater			
Deaerator			
Boiler feed pump			
Piping	and the second of the second o		
Turbine lead piping	ing the state of t		
Gland steam seal piping			
Turbine drain piping			
Reheat piping			
Condensate piping			
Turbine bypass system piping			
Boiler feedwater piping			
Extraction steam piping			
High pressure auxiliary steam piping			
Feedwater heater drain piping			
Outer drain and vent piping			

	Tenderer's Data Sheet		(Tenderer's Name)			<u></u>				
	Valve			,						1. 1
(3)	Description of	safety insulation								
			•					<u> </u>		
			•				; · · ·	A. 1		
(4)	Lagging				e to great	. •		•		
-	Material	in the second of					. :			
	Thickness	(mm)		k.F	<u>. 1 () - </u>	- 4	- 1 -			

Tenderer's Data Sheet

(Tenderer's Name)

16. PAINTING FOR STEAM TURBINE AND AUXILIARY EQUIPMENT

AUA	TUTANI EGOTLIENI	Van A	af maint
·		Primary painting	of paint <u>Finished</u> <u>painting</u>
(1)	Turbine casing	·····	· . -
(2)	Turbine metal lagging		
(3)	Main oil tank	<u></u>	
(4)	Turbine oil storage tank		
(5)	Turbine lubricating oil equipment		
(6)	Gland steam condenser and exhaust blower		
(7)	Surface condenser	4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
(8)	Air extraction equipment		•
(9)	Priming vacuum pump and motor	·	
(10)	Circulating water pump and motor		<u> </u>
(11)	Condensate pump and motor		
(12)	Feedwater heater (including drain pump & tank)		<u>-</u>
(13)	Deaerator		<u>-</u>
(14)	Boiler feed pump and motor		
(15)	Bearing cooling water heat exchanger		
(16)	Bearing cooling water pump and motor (including booster pump)		
(17)	Chemical injection equipment of bearing cooling water		•
(18)	Make up water transfer pump	<u>.</u>	<u> </u>
19)	Insulated piping		
20)	Uninsulated piping		_

Tenderer's Data Sheet

(Tenderer's Name)

Kind of paint
Primary Finished
painting painting

(21) Panel

(22) Make up water tank

	Tenderer's Data Sheet	The state of the s
17. INS	STRUMENTATION	(Tenderer's Name)
17.1 EI	ECTRO-HYDRAULIC GOVERNOR CONTROL SYST	EM
(1)	Type	
(2)	Signal range (From/to another system)	
(3)	Manufacturer, Model No.	
(4)	Number	
(5)	System cabinet	
	Dimension (mm) W x D x H	<u>x</u> <u>x</u>
	Grounding wire	
	Anti-vibration rubber	Yes No
(6)	Transmitter & actuator type	
(7)	Redundant or 2 out of 3 transmitter	
(8)	Control system block diagram with main interlock system by No.	
(9)	Power supply system block diagram by No.	
(10)	Outline arrangement of man-machine communication device by No. including maintenance tool	
(11)	Turbine trip circuit power source	<u> </u>
(12)	Outline composition of backup system for digital control system by No.	
(13)	Operating condition of control system	Temp. OC - OC
		Humidity % - %
(14)	Power source and consumption	DC V W
		AC V VA

	Tenderer's Data Sheet	. <u> </u>	e de la companya de l
the appropriate the second		(Tenderer	's Name)
(15)	MTBF more than 10 ⁵ hours	Yes	No

	Tenderer's Data Sheet	(Tenderer's	Name)
er o mi	IDDAYS GUDGOVAGON THOMOLOGICA (4003)	(tenderer s	Name /
	JRBINE SUPERVISORY INSTRUMENT (TSI)		
(1)	Туре		
(2)	Manufacturer		
(3)	Number		
(4)	Items		
	Eccentricity	Yes,	No No
	Control valve position	Yes,	No
	Speed	Yes	No
	Vibration (on shaft)	Yes,	No
	Expansion	Yes ,	.No
	Acceleration	Yes,	No
	Differential expansion	Yes	No
	Rotor Position	Yes,	No
	Bearing (metal, drain) temperature	Yes,	No
	Shell metal temperature	Yes ,	No
	Others	<u> </u>	· · · · · · · · · · · · · · · · · · ·
(5)	Vibration recorder		
	Manufacturer		
	Type and No.		
(6)	Digital indicator (Shaft, Speed, MW vibration)	Yes,	No
(7)	Turbine/generator bearing temp. recorder		
	Manufacturer		
	Type and No.		
(8)	Turbine casing metal temp. recorder		
	Manufacturer		

Tenderer's Data Sheet	
and the state of t	(Tenderer's Name)
Type and No.	
(9) Turbine eccentricity, rotor Position CV position & expansion	
Manufacturer	
Type and No.	
	and the second of the second o
	and the first of the property of the second
	er en en groupe (blever) de la companya en

	Tender's Data Sheet				
			(Tenderer's Name)		
17.3 SF	PECIAL INSTRUMENTS				
(1)	Make up water flow meter	•	Albania (Langenty Claw) Logic (Langenty Claw)		
	Type	•	Positive displacement		
	Manufacturer				
	Flow range	(m ³ /h)	vicinistic de la companya de la comp La companya de la companya del companya de la companya de la companya de la companya del companya de la companya de la companya de la companya de la		
	Accuracy	(%)			
	Calibrated by (Institute, laboratory)			
(2)	Condenser circulating wat detector (if equired)	er leak			
	Туре				
	Sampling points (4 points or more)				
	Manufacturer				
	Outline arrangement of leak detector system	10 g			
		·			

Panel (H x W x D) mm

Ţ	enderer's Data Sheet		/Tondon	n'a Namal
	gregija i kilomer dit prih i i jedina i i Zilomina stalicija		(rengere	er's Name)
	ELLANEOUS INSTRUMENTS AND ROL APPARATUS			
		•	Manufacturer	Model No.
(1) R	ecorder			
	Electric signal (V, mA	etc.)		
			· .	
	Temperature (for thermocouple, RTD)			
) (2) 1	ndicator			
	Dial type			
	Vertical type	-j	<u>, , , , , , , , , , , , , , , , , , , </u>	
(3) T	ransmitter			
	Pressure (Draft)	•		erete i zelja. Lipina konstant i
	Temperature			Anabit (
	Flow			and Astronomical Control
	Level			
	Analysis (conductivity, pH, etc.)		Angele Anne	vi (<u>maka, 11 m</u>
) . (4) C	ontroller	i .		en de la companya de
	Pressure			
	Temperature	e e	<u> </u>	
	Flow			
	Level		energia. La propriata de la companya de la c	n <u>ga jangga</u>
	Analysis (conductivity, pH, etc.)			

	Tenderer's Data Sheet	(Tenderer	's Name)	
		Manufacturer	Model No.	
(5)	Switch			. *
(0)	Pressure (Draft)			
	Temperature			
	Flow			
	Level			
•	Limit switch			
(6)	Local indicator			
	Pressure gauge			
	Thermometer		- (* * (*) (*) (*) (*) (*)	
	Flow (positive displacement type)			
	Flow (other)	·		
	Level			
(7)	Sight glass			
(, ,	Sight flow			
				
	Level glass gauge			
(8)	Primary element			
	Thermocouple			
	RTD			
	Thermo-well	:		
٠	Flow orifice			
	Flow nozzle			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Hq			
	Conductivity		•	

· ·

	Tenderer's Data Sheet		(Tenderer's Name)		
			Manufacturer		
(9)	Control valve				
			·		
(10)	Manometer	$t = \epsilon_{k,k}$			
(11)	Thermocouple extension wire				
(12)	Control tubing			Mary Mary 1	

Tenderer's Data Sheet			Pandanau'.	and Nome		
		(1	l'enderer's	s Name)		
17.5 POWER CONSUMPTION						
(1) Instrument air	(Nm ³ /min)			1.3.3.3.4		
(2) Electric power						
AC 110V	(KW)		<u> </u>			
AC 220V	(KW)	·		N. 2 (187	<u>.</u> .	
DC 220V	(VÅ)			e North Charles	1	

SECTION IV

ANCILLARY SYSTEM AND COMMON AUXILIARY EQUIPMENT

(Unit 1)

SECTION-IV: ANCILLARY SYSTEM AND COMMON AUXILIARY EQUIPMENT

		PAGE
1.	HOUSE BOILER	DC01-1
2.	TURBINE ROOM OVERHEAD CRANE	DC02-1
3.	PLANT WATER SYSTEM	DC03-1
4.	DRAINAGE AND WASTE WATER TREATMENT EQUIPMENT	DC04-1
5	FUEL OIL SYSTEM	DC05-1
6.	FIRE PROTECTION SYSTEM	DC06-1
7.	INTAKE SCREEN	DC07-1
8.	CHLORINATION EQUIPMENT	DC08-1
9.	YARD INSTRUMENT AIR SYSTEM	DC09-1
10.	PIPE SUPPORT AND STRUCTURAL STEEL FOR YARD PIPING	DC10-1
11.	LABORATORY AND INSTRUMENTS	DC11-1
12.	REPAIR ROOM INSTRUMENTS	DC12-1
13.	TRUCK CRANE	DC13-1
14.	FORK LIFT TRUCK	DC14-1
15.	MACHINE SHOP EQUIPMENT	DC15-1
16.	MISELLANEOUS INSTRUMENTS AND CONTROL APPARATUS	DC16-1

	•	togan in the base of		(Tenderer's Name)
	IV. AN	CILLARY SYSTEM AND COMMON A	UXILIARY EQ	UIPMENT
	1. HOUS	SE BOILER		
	(1)	Туре		and the second s
	(2)	Manufacturer		
	(3)	Number		
. •	(4)	Capacity	(kg/h)	
	(5)	Design pressure	(kg/cm ² g)	
	(6)	Design temperature	(°C)	A de loge per d'a d'écati
	(7)	Heat transfer surface	(m ²)	
•	(8)	Efficiency at rated load	(%)	
	(9)	Gas temperature at boiler outlet	(°C)	
	(10)	Steam outlet connection		
		Type of valve	• •	
		Size	(mm)	
		Material		
Land	(11)	Gas firing equipment	3.773.3	
	<u>.</u>	Burner		
0	:	Туре		
	• • • • • • • • • • • • • • • • • • • •	Number		
		Atomizing method	*	
		Forced draft fan (type, flow x press.)		
		Fuel oil pump (type, flow x press.)		
		Combustion control		

Tenderer's Data Sheet

	Tenderer's Data Sheet			
			(Tenderer's Name)	
	Fuel oil consumption at evaporation	max. (kl/h)		
	Fuel oil tank	(kl)		_
(12)	Feed water equipment	•	en e	
	Feed water pump			
	(type, flow x press.)			
٠	Feed water control (type	e)		
	Feed water tank	(kl)		
	Drain collecting tank	(kl)	The second of the second of	· ·
(13)	Stack		er og stoleret	
	Туре		<u> </u>	
	Material	•		
	Height	(mm)	A (Antonia)	<u> </u>
	Diameter	(mm)		
(14)	Control panel			
	Туре			·
	Dimension	(mm)		 .
	ACC Control System	·	Yes No	
(15)	Power source			
	Total KW		The state of the s	
	Voltage			_
	Phase		e de la companya del companya de la companya de la companya del companya de la co	
(16)	Total weight of house boiler	(kg)	The control of the property of the control of the c	
1257		(46)	Authorities (1986)	
(17)	Pressure control valve			
	Туре			-
	Number			

	Tenderer's Data Sheet				
			Т)	enderer's	Name)
(18)	Insulation material				
•					
(19)	Painting material			· · · · · · · · · · · · · · · · · · ·	
(20)	Performance data for hou	se boiler			
		load	50%	75%	100%
	Steam generation	(T/h)			
	Drum pressure	(kg/cm ² g)	·····		· ·
e.	Boiler outlet steam pressure	(kg/cm ² g)			
	Fuel oil consumption	(kg/h)			
	Excess air	(%)			
	Gas temp. at boiler outlet	(°C)			
	Number of burner			1.21.4	
	Boiler efficiency	(%)		. <u> </u>	

		Tenderer's Data Sheet	•	
				(Tenderer's Name)
2.	TURB	INE ROOM OVERHEAD CRANE	·	grand the state of
	(1)	Туре		
	(2)	Manufacturer		
	(3)	Number		
	(4)	Capacity		
		Main hoist	(ton)	*
		Auxiliary hoist	(ton)	*
	(5)	Span (Center to center center rails)	(mm)	
	(6)	Runway rail		
		Туре		
		Length (total)	(mm)	
	(7)	Full load speed		
		Main hoist	(m/min)	
		Auxiliary hoist	(m/min)	e de la companya de l
		Trolley travel	(m/min)	
		Bridge travel	(m/min)	
	(8)	Maximum life of hook		
		Main hoist	(mm)	
		Auxiliary hoist	(mm)	
	(9)	Vertical control movement	(mm)	*
(10)	Top runway rail to low poi of roof truss	nt	
(:	11)	Motor		The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause

		Tenderer's Data Sheet			(Tenderer	's Name)
				Туре	Voltage	KW rpm
		Main hoist				16 16
	e*•	Auxiliary hoist		· ·	<u> </u>	4 <u>.4.24</u>
		Trolley travel		***************************************		· · · · · · · · · · · · · · · · · · ·
		Bridge travel			<u> </u>	
(12)	Brake				
•		Main hoist		· .		
4 - 4		Auxiliary hoist	e gewane	1	·	
		Trolley travel	en e		· .	
		Bridge travel	and the second	· · · · · · · · · · · · · · · · · · ·		<u> </u>
(13)	Diameter of drum				and design to the
		Main hoist	(mm)		<u>. 4. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.</u>	<u>a e la </u>
		Auxiliary hoist	(mm)			
(14)	Bridge type				
(15)	Operation cab size		· · · · ·	· · · · · · · · · · · · · · · · · · ·	
(16)	Hoisting rope size				
		Main hoist	(mm)	·		
) .		Auxiliary hoist	(mm)			
(17)	Wheel	•			
				Bri	dge	Trolley
		Diameter	(mm)		· ·	· · · · · · · · · · · · · · · · · · ·
		Number				
		Maximum load (each wheel)	(kg)		· · · · · · · · · · · · · · · · · · ·	
(18)	Trolley wire size	(mm ²)		· · · · · · · · · · · · · · · · · · ·	

	Tenderer's Data Sheet	· · · · · · · · · · · · · · · · · · ·	(Tenderer's Name)
(19)	Material		
	Bridge		
	Trolley	·	
	Drum		
	Hoisting rope		
	Trolley wire		
(20)	Weight	•	
	Bridge	(kg) approx.	**************************************
	Trolley	(kg) approx.	
	Assembly	(kg) approx.	
(21)	Painting		tay a second second
(22)	Divided package number shipping	for	

<u>Tenderer's Data</u>	a Sheet	(Tenderer's Name)
3. PLANT WATER SYSTEM		g et en sta
3.1 Water pretreatment	system	en e
Quality of treated of coagulation sed	water at outlet	e (e. 1907) Politica de la companya de la compa
PH The second second		e i de la companya de
Turbidity Suspended sol Iron		*
Treated capac	ity	* n ³ /h)
Quality of treated outlet of filter ed	water at quipment	
PH		<u>* * * * * * * * * * * * * * * * * * * </u>
Suspended sol	id i je vejir	*
(1) Raw water under	rground receiving tan	k 1 - Derektion step om eg se
(a) City water	r boostor pump	
Туре		
Manufactu	rer	
Number		
Capacity	(m ³ /h)	
Discharge	head (m)	
NPSH	(m)	
Speed	(rpm)	
Shaft hors	sepower (KW)	
Connection	n size	
Suction	n (mm)	
Discha	rge (mm)	

Tend	erer's Data Sheet	-		en en en de la companya de la compa La companya de la co
				(Tenderer's Name)
	Material			
	Casing			
	Shaft			
ė.	Impeller			
	Motor			The Tenderer shall indicate the motor specification in
				accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
	Weight		•	
- 4	Pump	(kg)	approx.	
	Complete	(kg)	approx.	
(b)	Raw water transfe	er pui	mp .	
	Туре			
	Manufacturer		Section Sections	
	Number		1:1	
	Capacity		(m ³ /h)	
	Discharge head		(m)	
	NPSH		(m)	
	Speed		(rpm)	en e
	Shaft horse power	r	(KW)	i para bala A
	Connection size			
	Suction		(mm)	
	Discharge		(mm) ****	jest s kalendarije i jedina i
	Material			
	Casing		. 414	
	Shaft		i de la companya di seria di s	a pasa san Chair na gaire
	Impeller			

	3.0	nderer B Data Shee	<u>.</u>		
		of the control of the figure of the control of the		(Tender	er's Name)
		Motor		The Tenderer s	ification in
				accordance wit	h sub-clause 10
•				V of Tenderer'	otor" in Clause s Data Sheet.
•		Weight			
		Ритр	1941 Ann	•	* *
	• •		(kg) approx.	e de la companya de l	The state of the s
		Complete	(kg) approx.		
	(c)	Level indicator	•		
		Туре			(2) (1)
		Manufacturer			
		Number			
	(b)	Painting			Array and the second se
٠	(-/	- Tarmornia	1.11.		
			e de la companya de La companya de la companya de l	Material	Size
	(e)	Piping			
	***. X * * * * * * * * *		•		
					. 37
	(2) Filt	ter equipment		:	
	(a)	Filter			
•	2.35	Type			
•			, Maria. Baratan Tanangan Santan		
		Manufacturer		 	
		Number	· · · · · · · · · · · · · · · · · · ·		
		Capacity	(m ³ /h)	, ,	
		Filters			The first of the f
		Filtration rate	(m/h)		
			(,)		
		Washing rate by back-washing	(m/h)		
		Cleaning rate by air scrubbing	(m ³ /m ² /h) _		
		- I) 003-3 -		

Tend	erer's Data Sheet		(Tenderer'	s Name)
	Net washing and cleaning time per onc	e		
	Material and lining			
٠	Diameter	(mmø)		<u></u>
	Height	(mm)		
	Weight (kg)	approx.	ing _{and} and a second	
(b)	Air scrubbing blower		and the second section of the second	
	Туре			erski det Lagra
	Number			
	Capacity	(m ³ /h)		
	Exhaust pressure	(mmHg)		
	Speed	(rpm)		
**	Noise	(dB)	· · · · · · · · · · · · · · · · · · ·	
	Material	(ub)		
	Casing			· · · · · · · · · · · · · · · · · · ·
	Shaft			
	Blade			
	Motor		The Tenderer shall the motor specific accordance with st	cation in ub-clause 10
			of "Electric Motor V of Tenderer's D	
(c)	Painting			
(d)	Piping		1 <u></u>	
: *			Material	Size
			-	

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	Tenderer's Data Sheet	(Tenderer's Name)	
(3)	Treated water underground	storage ta	nk
	Туре		·
	Capacity		m ²
	(a) Filter backwashing p	ump	
	Туре		
	Manufacture		
	Number		
	Capacity	(m ³ /h)	
	Discharge head	(m)	
	NPSH	(m)	
	Speed	(rpm),/////	
	Shaft horse power	(KW)	
	Connection size		20 O C
	Suction	(mm)	
	Discharge	(mm)	
	Material		
	Casing State of Casing State o		
	and a lighter has been been a light of the l	· · · · · · · · · · · · · · · · · · ·	
	Motor		The Tenderer shall indicate motor specification in accord-
		n dun e Santuán	ance with sub-clause 10 of "Electric Motor" in Clause V of Bidder's Data Sheet.
	Weight		
	Pump (kg)	approx.	
	Complete (kg)	approx.	

reno	<u>lerer's Data Sheet</u>			
			(Tenderer's Name)	
(c)	Treated water transfer pump		and the control of the second	
	Туре	•		
	Manufacturer			
	Number			
	Capacity	(m ³ /h)		
•	Discharge head	(m)	<u> </u>	
	NPSH	(m)	A Agentin	
	Speed	(rpm)	7 1 1 2 <u>2 </u>	
	Shaft horse power	(KW)		
	Connection size	;		
	Suction	(mm)		
÷	Discharge	(mm)		
	Material	fum)		
	Casing			
	Shaft			
	Impeller			
	Motor		The Tenderer shall indicate the motor specification in	
			accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.	
	Weight		V OI TORRETEL S DAVA SHOOT.	
	and the second of the second	annmay		
		approx.		
		approx.		
(d)	Level control			
	Туре			
	Manufacturer			
	Number			

•

renderer's Data Sheet	Art grant of the second section is		
and for the second section of the second	(Tenderer's Name)		
(e) Painting	the production of the second		
	Material Size		
Treated water transfer pump - Service water tank			
Filter back washing pump	ment of proceedings		
- Filter equipment			

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	Tend	<u>erer's Data Shee</u>	et e		
				÷	(Tenderer's Name)
(4)	Chem	ical storage and	linject	ion equip	pment
	(a)	Coagulant tank	• .		
		Туре			
		Manufacturer			
		Number			
		Capacity		(m ³)	
		Diameter		(mmø)	
		Height		(mm)	
		Material and li	ning		
		Weight	(kg)	approx.	
	(b)	Coagulant dosin	ng pump		
		Туре			
		Capacity		(1/h)	
		Manufacturer			
		Number			
		Head		(m)	
		Motor			The Tenderer shall indicate the motor specification in accordance with sub-clause 10 of "Electric Motor" in Clause V of Tenderer's Data Sheet.
		Material and li	ning		
		Weight	(kg)	approx.	
	(c)	Coagulant tank level control		ontrol	
		Туре			
		Manufacturer			
		Number			