



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad

Ph: 9206500, 9207200, Fax : 9210215

E-mail: registrar@nepra.org.pk

Registrar

No. NEPRA/R/LAG-163/3411-13

October 29, 2010

Chief Executive
Radian Energy Power Generation Company (Pvt.) Ltd.
House No. 405, Street No. 12,
Sector F-10/2, Islamabad

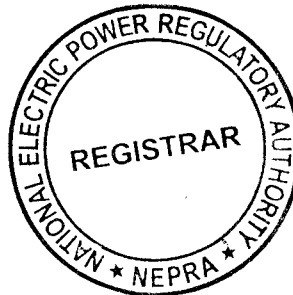
Subject: **Generation Licence No. IGSP/29/2010**
Licence Application No. LAG-163
Radian Energy Power Generation Company (Pvt.) Ltd. (REPGCPL)

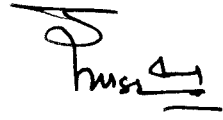
Reference: *Your letter No. Nil, dated March 15, 2010.*

Enclosed please find herewith Generation Licence No. IGSP/29/2010 granted by National Electric Power Regulatory Authority (NEPRA) to Radian Energy Power Generation Company (Private) Limited, pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997). Further, the determination of the Authority in the subject matter is also attached.

2. Please quote above mentioned Generation Licence No. for future correspondence.

Enclosure: **Generation Licence**
(IGSP/29/2010)




(Syed Safer Hussain)

Copy to:

1. Chief Executive Officer, Faisalabad Electric Supply Company (FESCO),
Abdullahpur, Canal Bank Road, Faisalabad
2. Director General, Pakistan Environmental Protection Agency, House No. 311,
Main Margalla Road, F-11/3, Islamabad.

**National Electric Power Regulatory Authority
(NEPRA)
Islamabad – Pakistan**

GENERATION LICENCE

No. IGSP/29/2010

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), the Authority hereby grants a Generation Licence to:

Radian Energy Power Generation Company (Private) Limited

Incorporated under the Companies Ordinance, 1984
Under Certificate of Incorporation

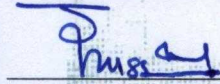
No. 0068856 dated March 05, 2009

For its Plant located at Shahkot-Chak Jhumra Road, Faisalabad, Punjab

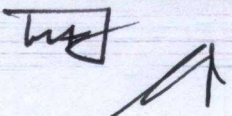
(Installed Capacity: 164.368 MW Gross ISO)

to engage in generation business subject to and in accordance with the Articles of this Licence.

Given under my hand this 29th day of October, Two Thousand & Ten, and expires on 30th day of December, Two Thousand & Thirty Seven.


Registrar





Article-1
Definitions

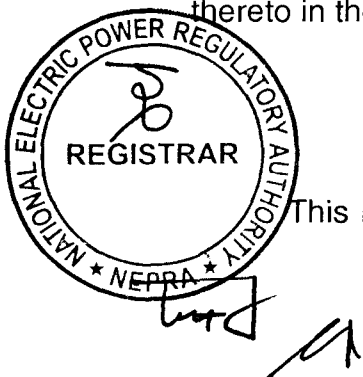
1.1 In this Licence

- (a) "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997);
- (b) "Authority" means the National Electric Power Regulatory Authority constituted under section 3 of the Act;
- (c) "Grid Code" means the NTDC Grid Code;
- (d) "Licensee" means Radian Energy Power Generation Company (Private) Limited;
- (e) "NTDC" means National Transmission and Despatch Company;
- (f) "Power Purchaser" means CPPA of NTDC purchasing power on behalf of XW-DISCOs;
- (g) "Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000;
- (h) "XW DISCO" means an Ex-WAPDA distribution company engaged in the distribution of electric power.

1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or in the Rules.

Article-2
Application of Rules

This Licence is issued subject to the provisions of the Rules, as amended



from time to time.

Article-3
Generation Facilities

3.1 The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the power generation facilities of the Licensee are set out in Schedule-I to this Licence.

3.2 The net capacity of the generation facilities of the Licensee is set out in Schedule-II hereto.

3.3 The Licensee shall provide the final arrangement, technical and financial specifications and other details specific to generation facilities before commissioning.

Article-4
Term of Licence

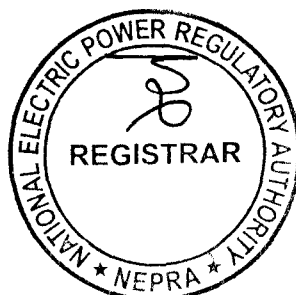
4.1 This Licence is granted for a term of twenty five (25) years after the Commercial Operation Date of the generation facilities.

4.2 Unless suspended or revoked earlier, the Licensee may within ninety (90) days prior to the expiry of the term of the Licence, apply for renewal of the Licence under the NEPRA Licensing (Application and Modification Procedures) Regulation, 1999 as amended or replaced from time to time.

Article-5
Licence fee

After the grant of the Generation Licence, the Licensee shall pay to the Authority the Licence fee in the amount and manner and at the time set out in National Electric Power Regulatory Authority (Fees) Rules, 2002.



Article-6
Tariff

The Licensee shall charge only such tariff which has been approved, determined, adjusted or specified by the Authority.

Article-7
Competitive Trading Arrangement

7.1 The Licensee shall participate in such measure as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement. The Licensee shall in good faith work towards implementation and operation of the aforesaid Competitive Trading Arrangement in the manner and time period specified by the Authority. Provided that any such participation shall be subject to any contract entered into between the Licensee and another party with the approval of the Authority.

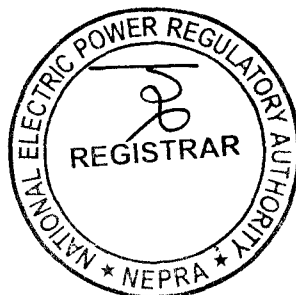
7.2 Any variation or modification in the above-mentioned contracts for allowing the parties thereto to participate wholly or partially in the Competitive Trading Arrangement shall be subject to mutual agreement of the parties thereto and such terms and conditions as may be approved by the Authority.

Article-8
Maintenance of Records

For the purpose of sub-rule (1) of Rule 19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

Article-9
Compliance with Performance Standards

The Licensee shall comply with the relevant provisions of NEPRA rules on Performance Standards as may be prescribed by the Authority from time to time.



Article-10
Compliance with Environmental Standards

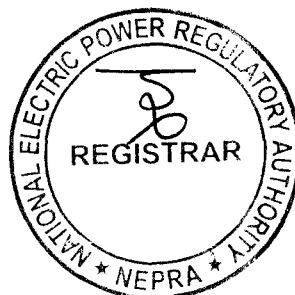
The Licensee shall comply with the environmental standards as may be prescribed by the relevant competent authority from time to time.

Article-11
Provision of Information

11.1 The obligation of the Licensee to provide information to the Authority shall be in accordance with Section 44 of the Act.

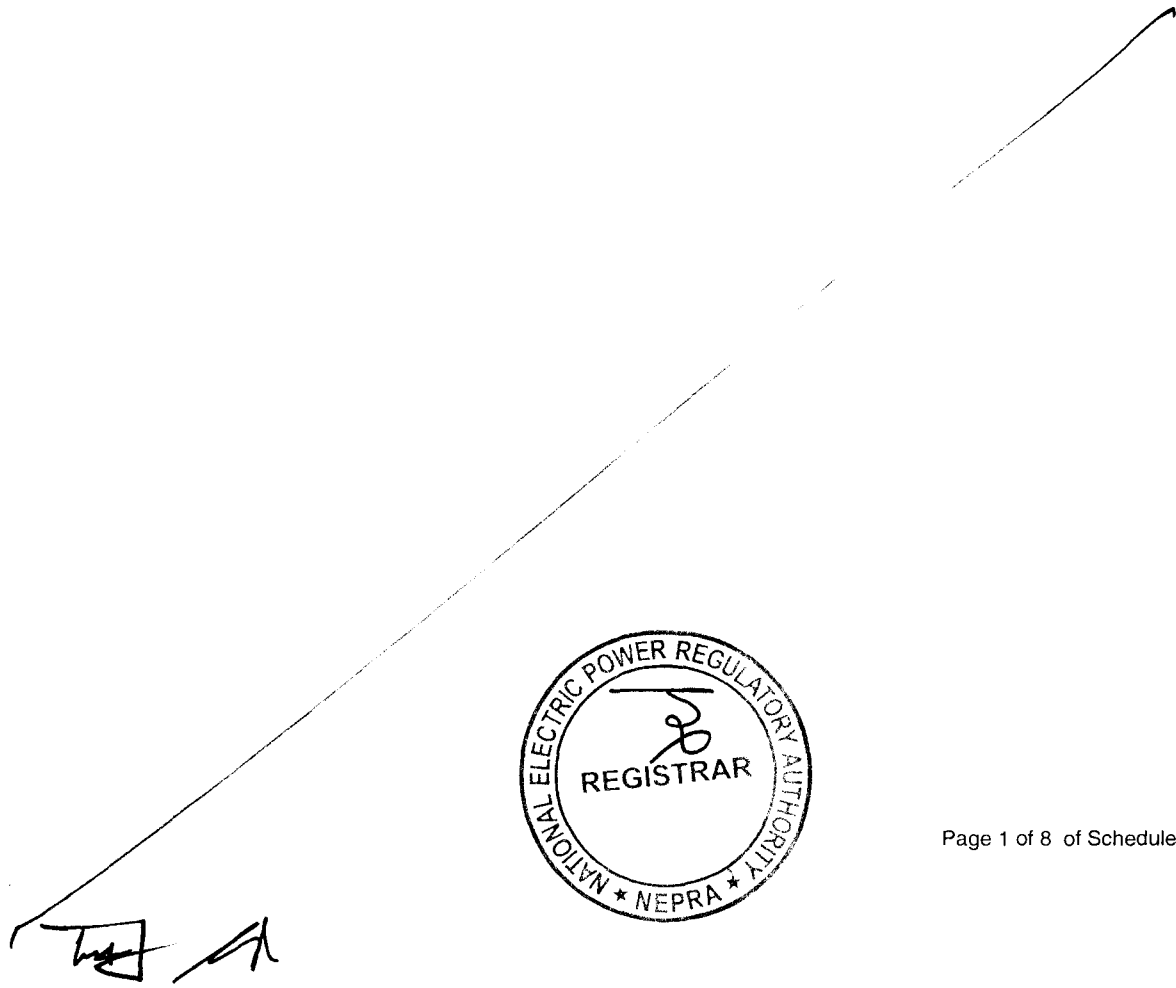
11.2 The Licensee shall be subject to such penalties as may be specified in the relevant rules made by the Authority for failure to furnish such information as may be required from time to time by the Authority and which is or ought to be or have been in the control or possession of the Licensee.

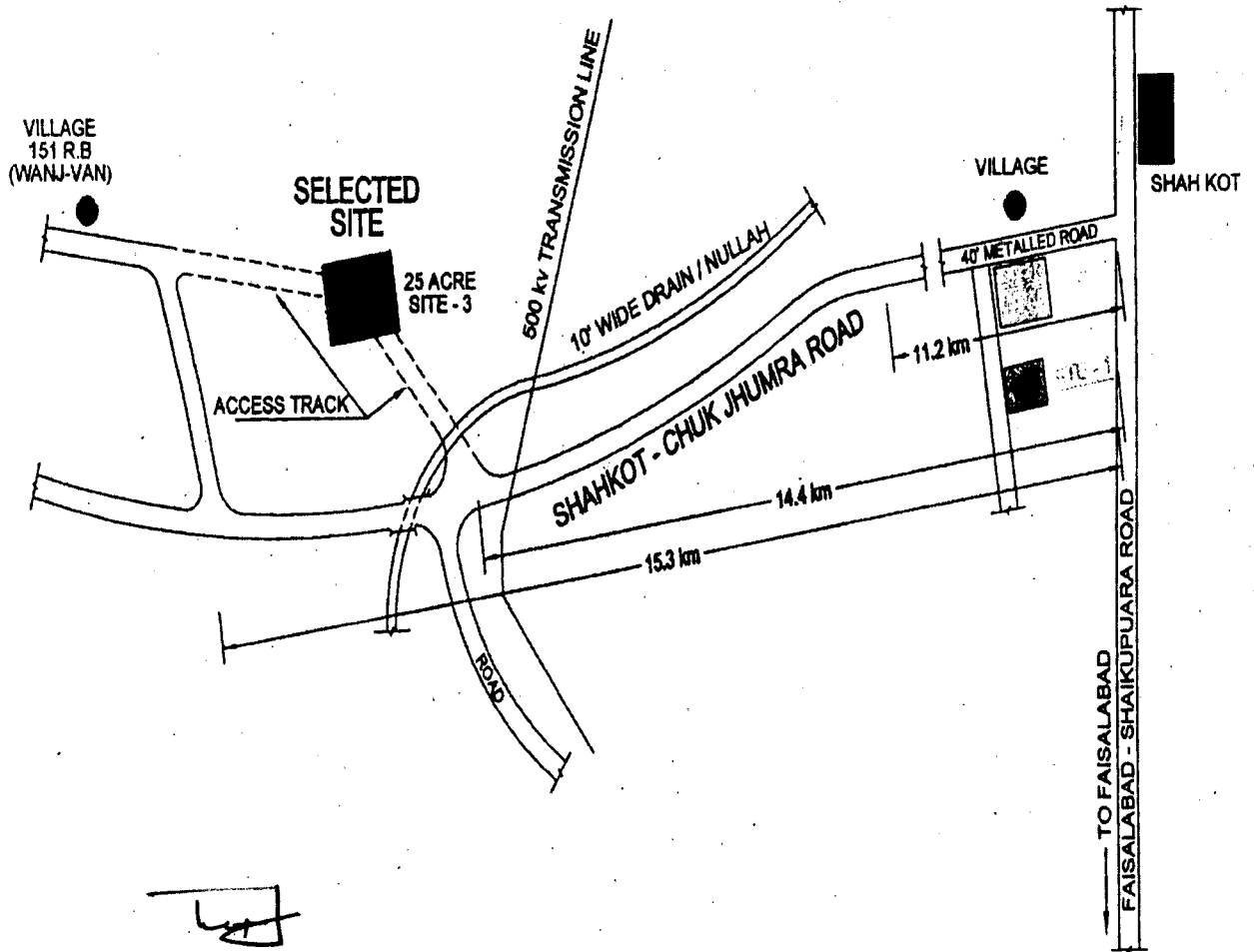
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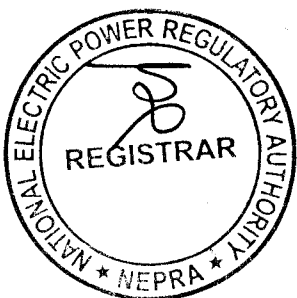
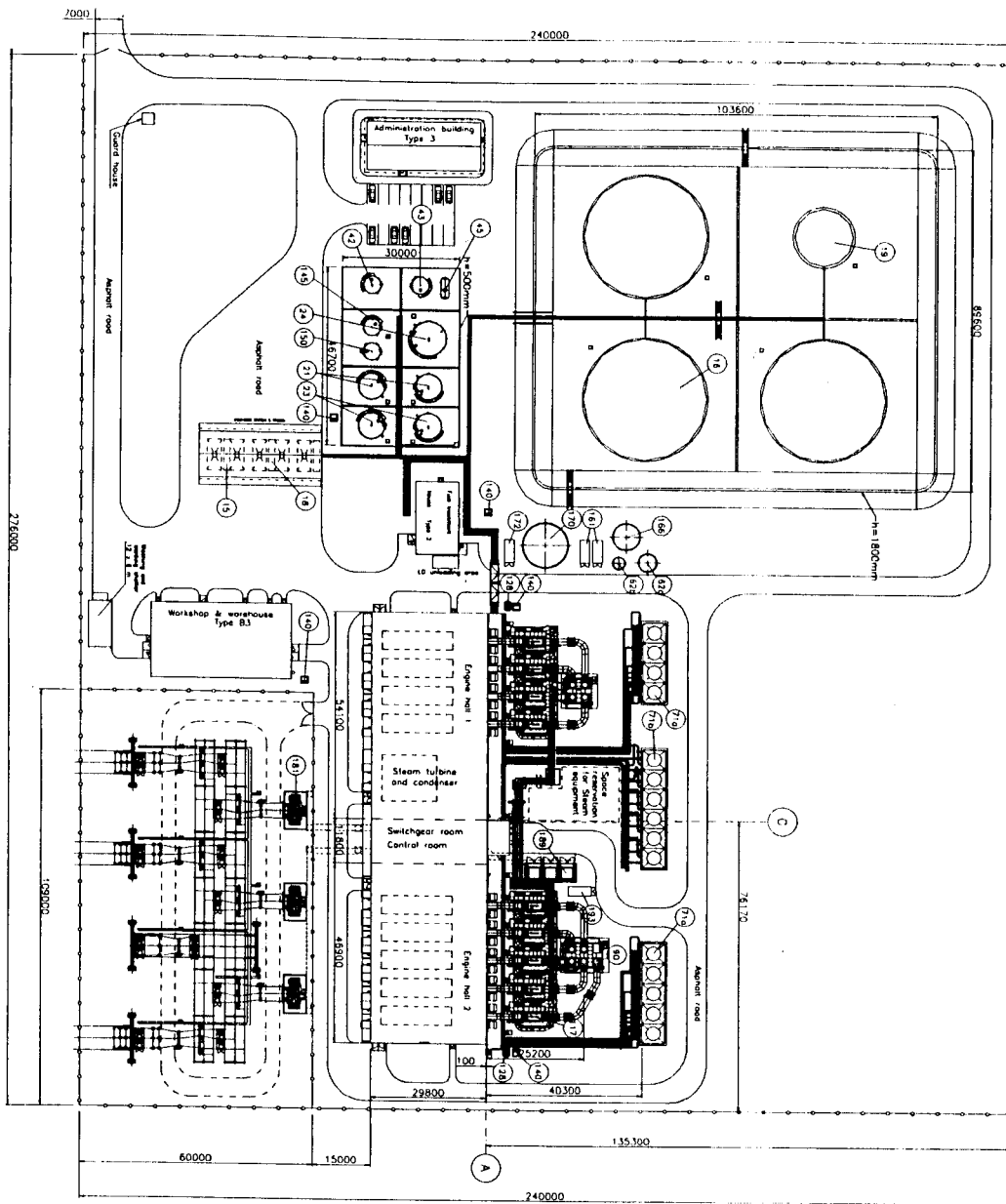


SCHEDULE-I

The location, size (capacity in MW) technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the Generation Facilities of the Licensee.





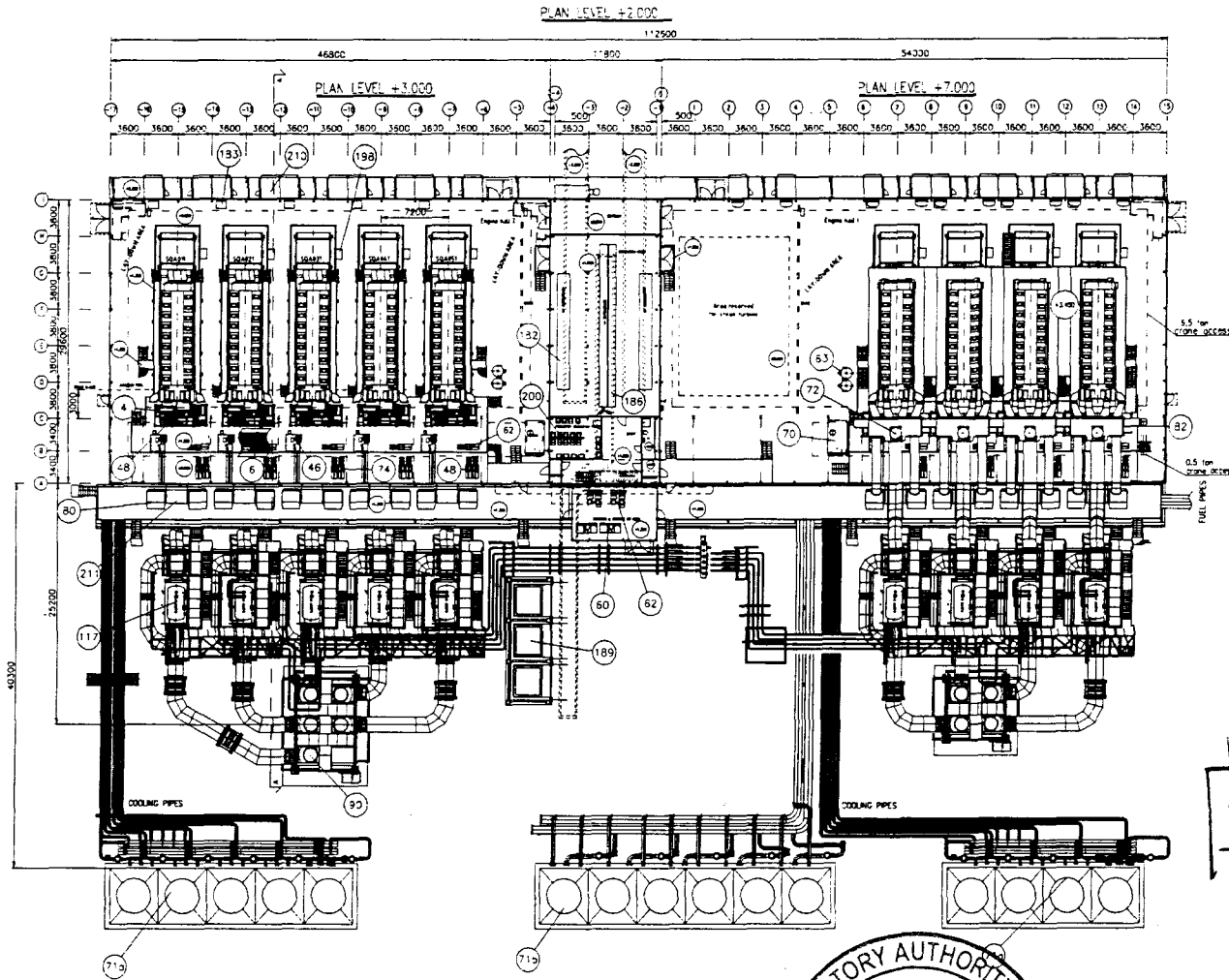


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Sl. No.	Particulars	Area (sq. m)	Volume (cu. m)
1	Engine Hall 1	141,000	4,230,000
2	Engine Hall 2	141,000	4,230,000
3	Steam turbine and condenser	141,000	4,230,000
4	Switchgear room	141,000	4,230,000
5	Control room	141,000	4,230,000
6	Workshop & warehouse Type B3	141,000	4,230,000
7	Administration building Type 3	141,000	4,230,000
8	Apartment roads	141,000	4,230,000
9	Other buildings	141,000	4,230,000
10	Total	1,410,000	42,300,000

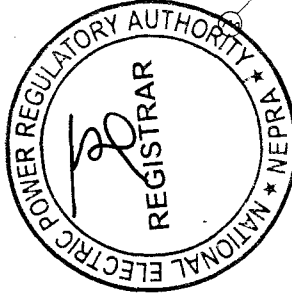
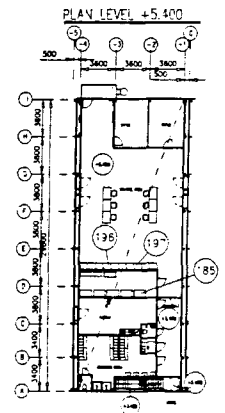
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6	Workshop & warehouse Type B3	141,000	4,230,000
7	Administration building Type 3	141,000	4,230,000
8	Apartment roads	141,000	4,230,000
9	Other buildings	141,000	4,230,000
10	Total	1,410,000	42,300,000

YELKANA
 0848242965



Item No	Pos	Code	DESCRIPTION	Quantity	MEASURING UNITS	MOUNTING LEVEL (Floor level)
1	6	SJA	Engine generator set	20000		+3.00
4	2	MA	Auxiliary module incl. compact booster	20000		+3.00
6	2	MPC	Power cable pipe cap	20000		+3.00
38	2	PCC	LP cooler	1		+3.34
46	2	DBB	Lube oil separator unit	1		+3.35
48	2	---	Lube oil heat exchanger	1		+3.35
53	4	TSA	Starting air bottle	4.8		+3.60
70	2	VBA	Maintenance water tank	10		+3.30
72	2	VFA	LT- water expansion vessel	1		+3.35
74	2	---	Control heat exchanger	1		+3.35
80	18	NCA	Overfire filter	2114		+3.88
82	2	---	Charge air & exhaust gas module	1		+4.80
182	2	BAC	MV Switchgear	1		+3.00
185	2	BAN	Neutral point cable	1		+3.00
185	2	BEY	DC System	1		+3.00
186	2	BFA	LV Switchgear	1		+3.00
196	1	OFA	Control panel, common	1		+3.00
197	2	OCF	Control panel engine wise	1		+3.00
198	2	OCF	Control panel engine wise	1		+3.00
200	2	---	Frequency converter	1		+3.00
210	18	---	Ventilation unit (engine)	2100		+3.00
211	10	---	Ventilation unit (aux. area)	2100		+3.88

Item No	Pos	Code	DESCRIPTION	Quantity	MEASURING UNITS	MOUNTING LEVEL (Floor level)
60	2	NCA	Mixing air unit	1		---
62	2	NSA	Starting air unit	1		---
71a	2	VCA	Cooling tower	1		---
71b	2	---	Cooling towers for steam condenser	1		---
72	2	MAA	Exhaust gas stacker	1		---
77	2	RCC	Exhaust gas boiler	1		---
128	2	---	Boiler washing water tank	5		---
140	5	DAA	Oil water collecting pit	1		---
151	2	VSB	Water treatment container	1		---
152	2	---	Water storage tank	20		---
152	2	---	Treated water storage tank	20		---
155	1	---	Raw water tank	30		---
170	1	VFB	Fire water tank	720		---
172	1	---	Fire fighting container	1		---
187	3	ALT	Step-up transformer	1		---
189	3	BW	Station transformer	1		---
193	1	BLM	Block post unit	550		---



PRELIMINARY

WARTSILA logo and project information:

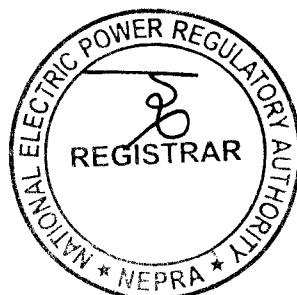
Master Sheet
 Power House 200P
 Radian Energy
 Date: 18-Dec-2009
 Drawn: 18-Dec-2009
 Checked: 18-Dec-2009
 Project No: 08A3242911

**INTERCONNECTION SCHEME FOR THE
DISPERSAL OF POWER DISPERSAL FROM
RADIAN ENERGY POWER GENERATION
COMPANY (PRIVATE) LIMITED**

The Power from the Radian Energy Power Generation Company (Private) Limited shall be dispersed to Load Center of FESCO at 132 KV Voltage level.

The exact scope of the Interconnection Facilities (IF) and Transmission Facilities (TF) pertaining to dispersal of power will be submitted to NEPRA after the completion of the relevant studies.

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Plant Details*

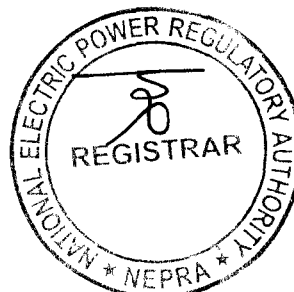
(A). General Information

(i).	Name of Applicant	Radian Energy Power Generation Company (Private) Limited.
(ii).	Registered/Business Office	House # 405, Street # 12, F-10/2, Isamabad.
(iii).	Plant Location	Shahkot-Jhumra Road, District Faisalabad, Punjab.
(iv).	Type of Generation Facility	Thermal Generation

(B). Plant Configuration

(i).	Plant Size Installed Capacity (Gross ISO)	164.368 MW	
(ii).	Type of Technology	Combined Cycle Power Plant	
(iii).	Number of Units/Size (MW)	Reciprocating Engine	9 x 17.076 MW
		Steam Turbine	1 x 10.684 MW
(iv).	Unit Make & Model	Reciprocating Engine	Wartsila/18V46
		Steam Turbine	Peter Brotherhood/General Electric 9G.E./Harbin, China or Equivalent
(v).	Commissioning and Commercial Operation Date (COD)	December 31, 2012	
(vi).	Expected Life of the Facility from COD	25 years	

* As provided by the Applicant



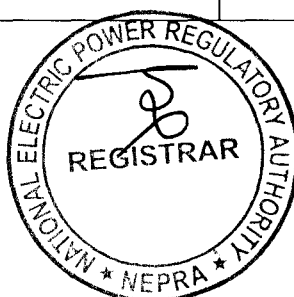
(C). Fuel Details

(i).	Primary Fuel	Residual Fuel Oil (RFO)	
(ii).	Back-up Fuel	Not applicable	
(iii).	Start-up Fuel	Light Furnace Oil (LFO)	
(iv).	Fuel Source (Imported/Indigenous)	Imported/Indigenous	
(v).	Fuel Supplier	PSO/Shell/PARCO	
(vi).	Supply Arrangement	Through Oil Tankers	
(vii).	No of Storage Tanks	Primary Fuel	Start-up Fuel
		1 Tanks	1 Tank
(viii).	Storage Capacity of each Tank	Primary Fuel	Start-up Fuel
		10,000 m ³	2,000 m ³
(ix).	Gross Storage (total)	Primary Fuel	Start-up Fuel
		10,000 m ³	2,000 m ³

(D). Emission Values

(i).	SO _x	Primary Fuel	Start-up Fuel
		2.03 g/m ³	As per National Environmental Quality Standards (NEQS)
(ii).	NO _x	Primary Fuel	Start-up Fuel
		2.00 g/m ³	As per NEQS
(iii).	CO	Primary Fuel	Start-up Fuel
		100 mg/nm ³	As per NEQS

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(iv).	PM ₁₀	Primary Fuel	Start-up Fuel
		110 mg/nm ³	As per NEQS

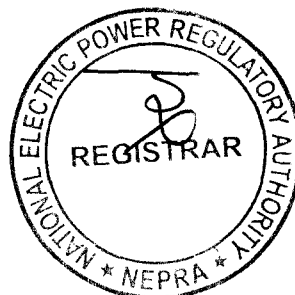
(E). Cooling System

(i).	Cooling Water Source/Cycle	Underground water from tube well/Closed loop.
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(F). Plant Characteristics

(i).	Generation Voltage	15 kV
(ii).	Frequency	50 Hz
(iii).	Power Factor	0.8 lagging to 0.95 leading
(iv).	Automatic Generation Control	Yes
(v).	Ramping Rate	03 MW/Min.
(vi).	Time required to Synchronize to Grid and loading the complex to full load.	76 minutes (from cool start to full load)

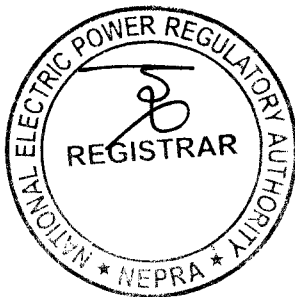
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SCHEDULE-II

The net capacity of the Generation Facilities of the Licensee

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SCHEDULE-II*

1.	Installed Capacity Gross ISO (9 x 17.076 MW R.E + 1 x 10.684 MW S.T.)	164.368 MW
2.	De-rated Capacity at Mean Site Conditions (9 x 16.934 MW R.E. + 1 x 10.684 MW S.T.)	163.090 MW
3.	Auxiliary Consumption	004.400 MW
4.	Net Capacity of the Plant at Mean Site Conditions	158.690 MW

Note

All the above figures are indicative as provided by the Licensee. The Net Capacity available to NTDC for dispatch and other purchasers will be determined through procedures contained in the Power Purchase Agreement (s) or Grid Code.

* As provided by the applicant

