



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-25/1732-34

April 24, 2009

Chief Executive Officer
Lakhra Power Generation Co. Limited
150 MW FBC Power Station
Lakhra-Khanote

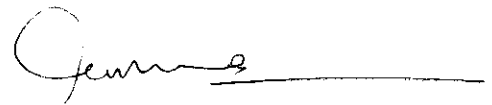
Subject: Modification in Generation Licence No. GL/06/2005, Dated February 18, 2005 of Lakhra Power Generation Company Limited (LPGCL)

Reference: Your letter No. CEO/LPGCL/PA-21/Rental Power Projects/Vol-I/2256-60, dated October 09, 2008

It is intimated that the Authority has approved "Licensee Proposed Modification" in Generation Licence No. GL/06/2005 in respect of Lakhra Power Generation Company Limited (LPGCL) pursuant to Regulation 10(11) of the NEPRA Licensing (Application & Modification Procedure) Regulations, 1999.

2. Enclose please find herewith modified Generation Licence No. GL/06/2005 along with modified Schedule-I & Scheduled-II attached as Annex-A & Annex-B, as approved by the Authority.

**Enclosure: / Modified Generation Licence
& Annex A - B**


(Engr. Arshad Mehmood)

Copy to:

1. Chief Executive Officer, National Transmission and Despatch Company Ltd. (NTDC), 414-WAPDA House, Shahrah-e-Quaid-e-Azam, Lahore
2. Director General, Pakistan Environmental Protection Agency, House No. 311, Main Margalla Road, F-11/3, Islamabad.



**National Electric Power Regulatory Authority
(NEPRA)**

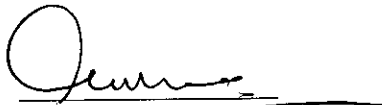
Islamabad – Pakistan

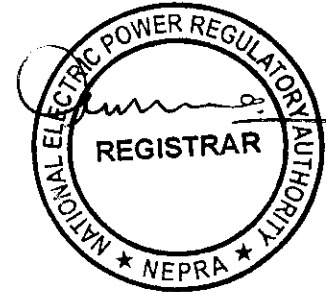
**GENERATION LICENCE
No. GL/06/2005**

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section-26 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997), the Authority hereby modifies the Generation Licence No. GL/06/2005, granted (on February 18, 2005 and expiring on February 17, 2020) to Lakhra Power Generation Company Limited, to the extent of changes mentioned as here under:-

- (i). **Changes in Schedule-I** attached as **Annexure-A**; and
- (ii). **Changes in Schedule-II** attached as **Annexure-B**.

This **Modification-I** is given under my hand this _____ day of
_____ **Two Thousand & Nine**.


Registrar







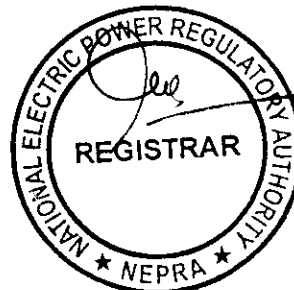
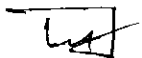
Modification to
Schedule-I of Generation Licence
No. GL/06/2005

(i). The location, size (capacity in MW) technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to Rental Power Station of Barage Mounted Rental Power Station of Karkey, Karadeniz Holdings, Turkey Near, Karachi, consisting of nine (09) pages), are added from pages 21 to 29 of Schedule-I.

(ii). Similarly, the location, size (capacity in MW) technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to Rental Power Station of Walters International, Pakistan at Korangi, Karachi, consisting of nine (09) pages, are added from pages 30 to 38 of Schedule-I.

(iii). Therefore, the total number of pages for Schedule-I has now been increased and modified to be read as 38 instead of 20 as in the original Generation Licence.

(iv). The foot note for the schedule-I is modified to be read as Page 1 of 38, Page 2 of 38,... Page 38 of 38 instead of Page 1 of 20, Page 2 of 20, ... Page of 20 of 20, accordingly.



Modification to Schedule – I

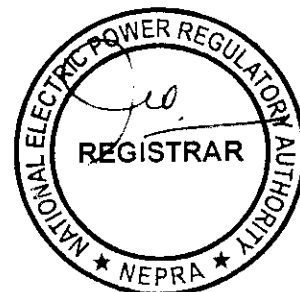
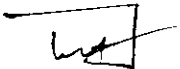
Of

Generation Licence No. GL/06/2005

In the name of

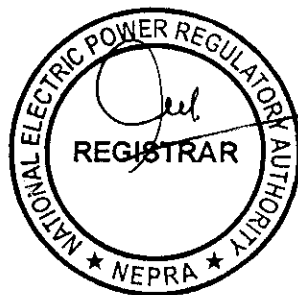
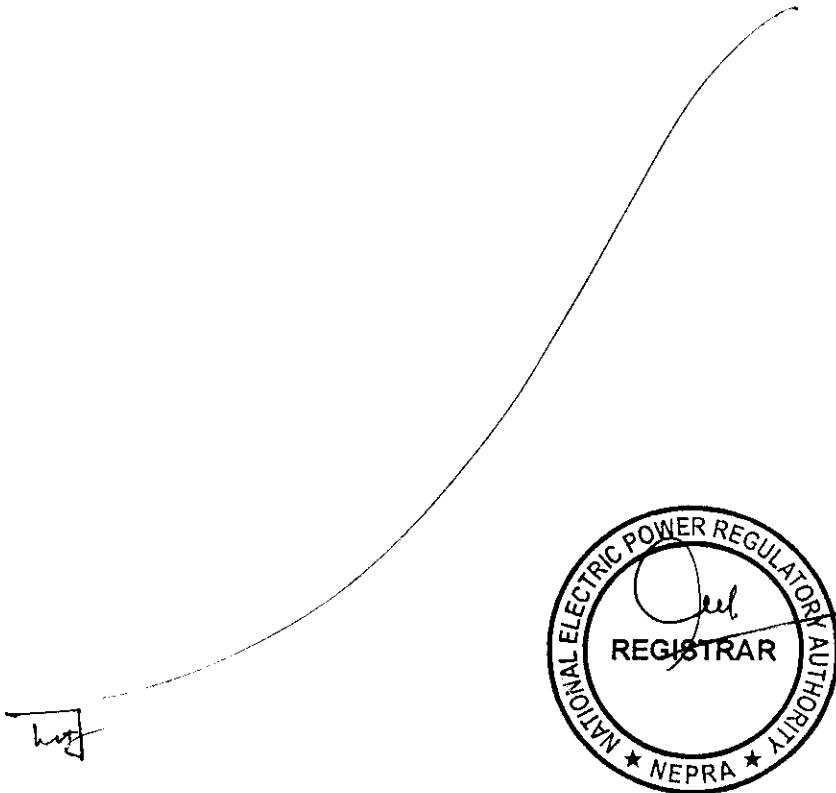
Lakhra Power Generation Company
Limited
(LPGCL)

(Annexure-A)


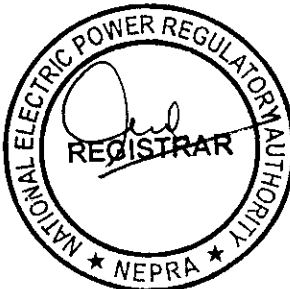


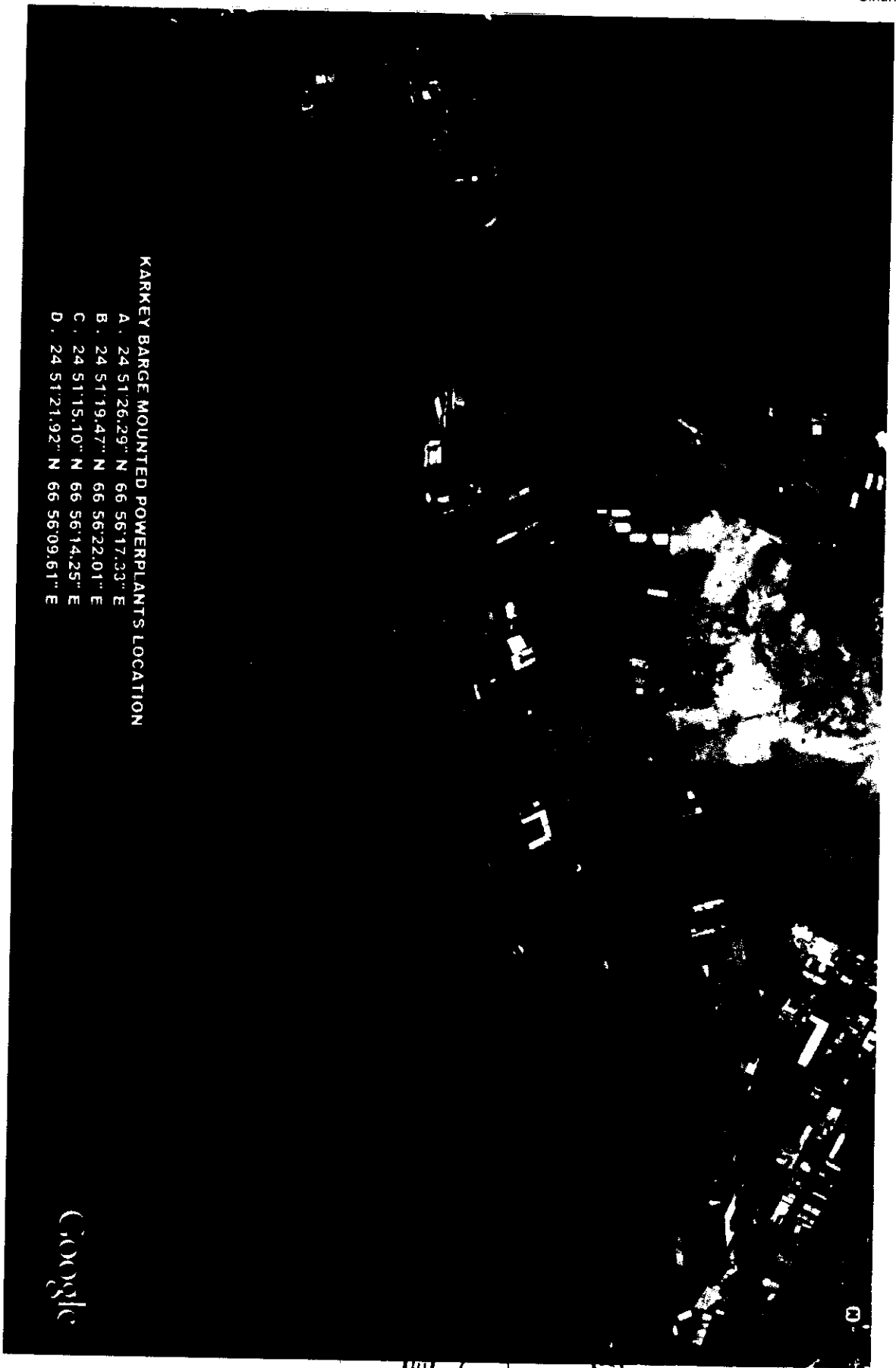
Barage Mounted Rental Power Station of Karkey, Karadeniz Holdings, Turkey Near, Karachi.

h



The Location, Size (Capacity in MW) Technology, Interconnection Arrangements, Technical Limits, Technical Functional Specifications and other details specific to Barage Mounted Rental Power Station of Karkey, Karadeniz Elektrik Uretim A.S. Karadeniz Holdings, Turkey, Karachi

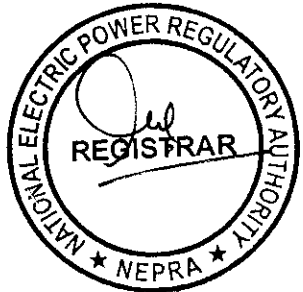
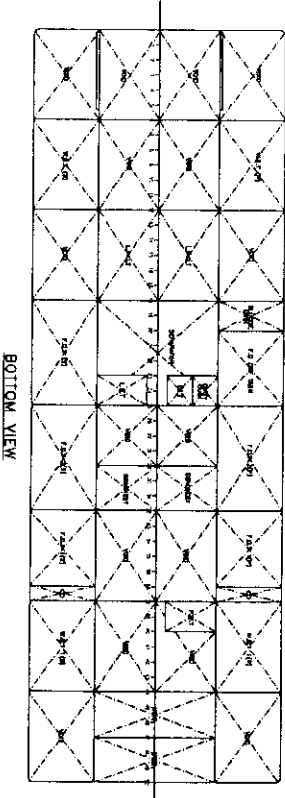
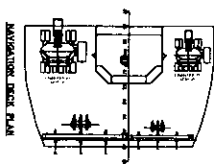
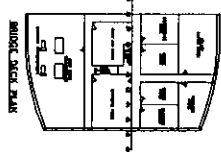
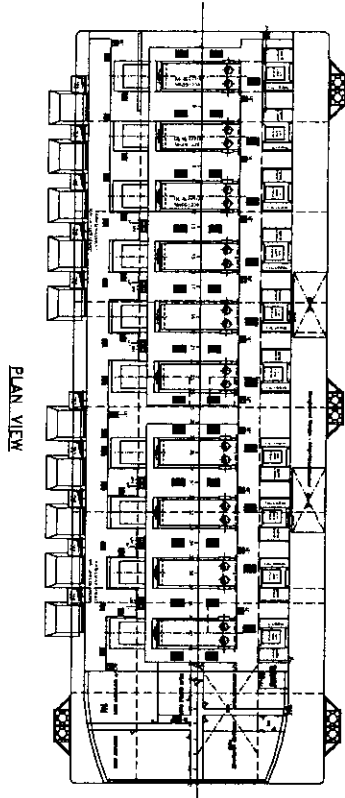
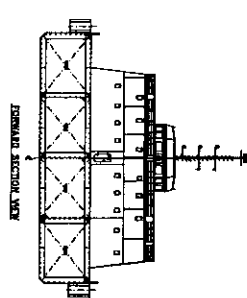
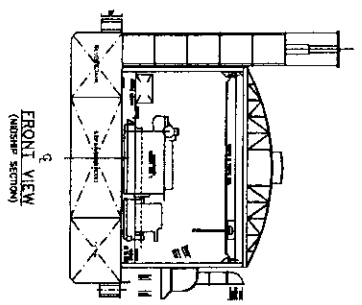
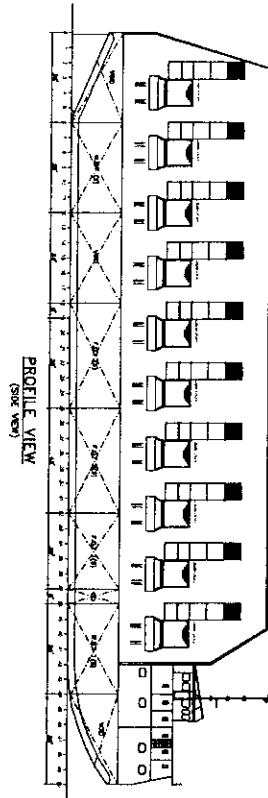
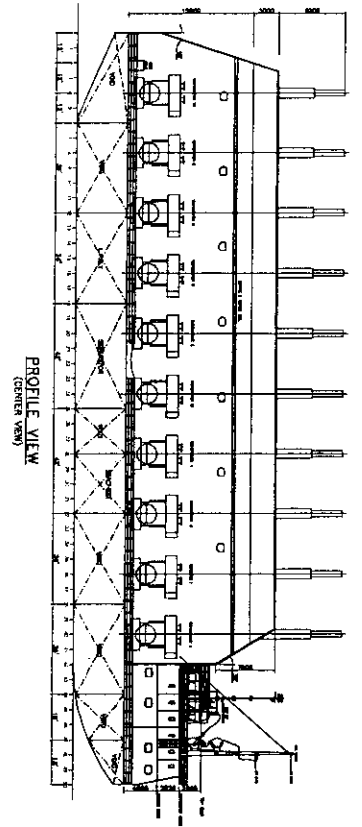


KARKEY BARGE MOUNTED POWERPLANTS LOCATION

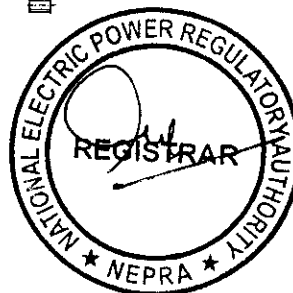
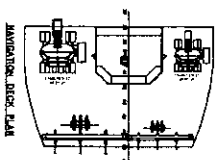
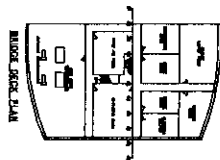
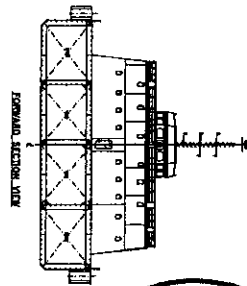
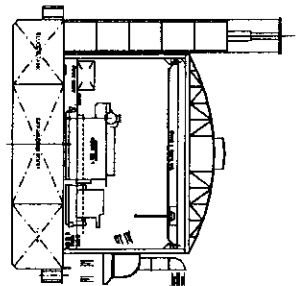
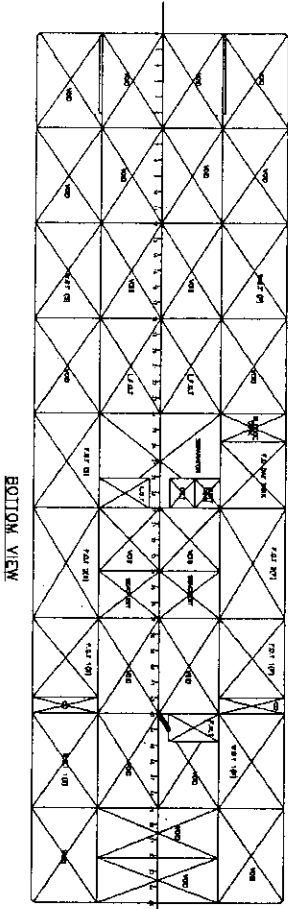
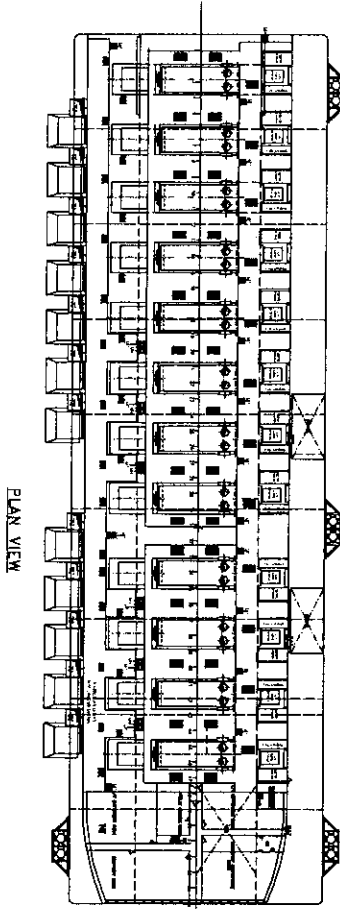
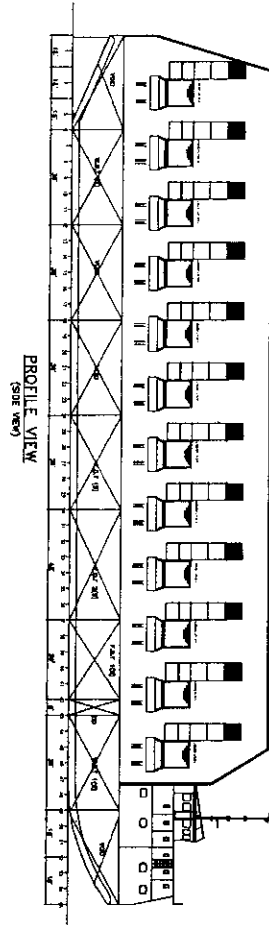
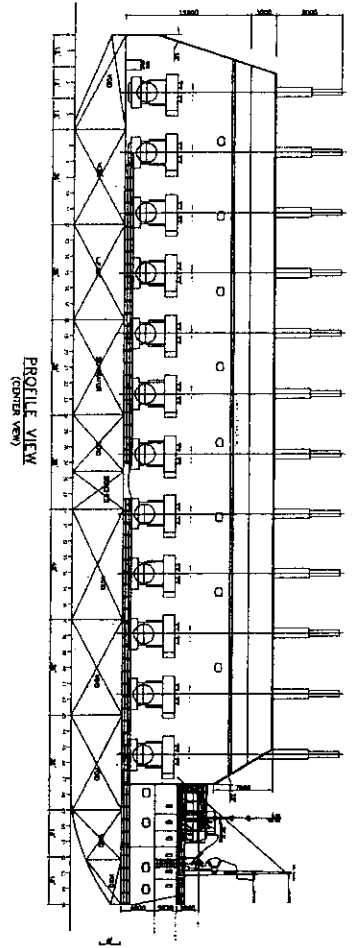
- A . 24 51'26.29" N 66 56'17.33" E
- B . 24 51'19.47" N 66 56'22.01" E
- C . 24 51'15.10" N 66 56'14.25" E
- D . 24 51'21.92" N 66 56'09.61" E

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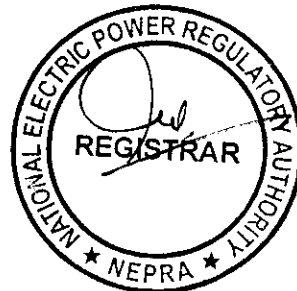
<p>KARKEY KARACHI-12 ENGINEERS</p>	
<p>DESIGNED BY: _____ DATE: _____</p>	
<p>CHECKED BY: _____ DATE: _____</p>	
<p>PROJECT: KARKEY BARGE MOUNTED POWER PLANT #1 LAY OUT</p>	
<p>DATE: _____</p>	<p>SCALE: _____</p>
<p>PROJECT NO: _____</p>	<p>CLIENT: _____</p>



<p>KARKEY ENGINEERING CONSULTANTS</p>	
<p>CHIEF ENGINEER KARKEY ENGINEERING CONSULTANTS 117-A, KARKEY ROAD, KARKEY, DISTRICT KARACHI EAST</p>	<p>DATE: / /</p>
<p>PROJECT: KARKEY BARBE MOUNTED POWER PLANT #2 LAT OUT</p>	<p>SCALE: 1/100</p>
<p>DESIGNED BY: / /</p>	<p>CHECKED BY: / /</p>
<p>DRAWN BY: / /</p>	<p>DATE: / /</p>

**INTERCONNECTION SCHEME FOR THE POWER
DISPERSAL OF BARAGE MOUNTED RENTAL
POWER STATION OF KARKEY, KARADENIZ
HOLDINGS, TURKEY NEAR, KARACHI.†**

The power generated from the power plant shall be dispersed to the load center of KESC by constructing of a New 132 KV D/C Transmission Line (measuring approximately 2.00 KM) from the delivery point on the board of the Barge Substation to Mauripur SubStation.



† As provided by LPGCL



Plant Details[‡]

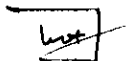
1. General Information

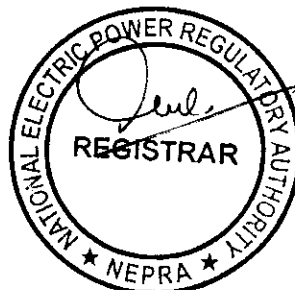
(i).	Name of Rental Company	Karkey, Karadeniz Elektrik Uretim A.S. Karadeniz Holdings, Turkey
(ii).	Plant Location	Near, Karachi
(iii).	Type of Generation Facility	Thermal Power Generation (Barge Mounted)

2. Plant Configuration

(i).	Plant Size Installed Capacity (Gross ISO)	248.95 MW			
(ii).	Type of Technology	Reciprocating Engines			
(iii).	Number of Units/Size (MW)	Barge-I		Barge-II	
		Unit 1~4	Unit 5~10	Unit 1~5	Unit 6~12
		4 x 11.20 MW	6 x 10.24 MW	5 x 11.567 MW	7 x 12.125 MW
(iv).	Unit Make & Model	Unit 1~4	Unit 5~10	Unit 1~5	Unit 6~12
		SULZER /16 V2A 40 S	SULZER /16 V2A 40 S	WARTSILA 16V46	WARTSILA 12V46
(v).	De-rated Capacity (at Mean Site Conditions)	242.723 MW			
(vi).	Auxiliary Consumption	10.921MW			
(vii).	Commissioning and Commercial Operation date (COD)	August 14,2009 (tentative)			
(viii).	Rental Period from COD	5 Years (i.e. 60 Months from August 14, 2009 to August 13, 2014)			

[‡] As provided by LPGCL



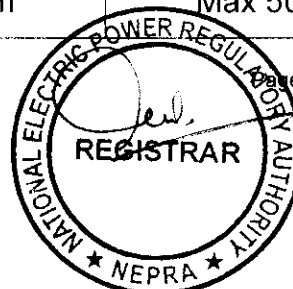


3. Fuel Details

(i).	Primary Fuel	Heavy Fuel Oil (HFO)	
(ii).	Alternative/Back Fuel	Up	Not Applicable (N/A)
(iii).	Start-Up Fuel	Diesel Oil (DO)	
(iv).	Fuel Source (Imported/Indigenous)	PSO or Imported Fuel	
(v).	Fuel Supplier	PSO or any other Oil Marketing Company	
(vi).	Supply Arrangement	Through Ships/Tankers etc	
(vii).	No of Storage Tanks	Primary Fuel	Start-Up Fuel
		02	02
(viii).	Storage Capacity of each Tank	Primary Fuel	Start-Up Fuel
		12,000 Tones	1,000 Tones
(ix).	Gross Storage (total)	Primary Fuel	Start-Up Fuel
		30,000 m ³	2,500 m ³

4. Emission Values

(i).	SO _x	Primary Fuel	Start-Up Fuel
		Max 2000 mg/m ³	Max 2000 mg/m ³
(ii).	NO _x	Primary Fuel	Start-Up Fuel
		Max 400 mg/m ³	Max 400 mg/m ³
(iii).	CO	Primary Fuel	Start-Up Fuel
		Max 800 mg/m ³	Max 800 mg/m ³
(iv).	PM ₁₀	Primary Fuel	Start-Up Fuel
		Max 50 mg/m ³	Max 50 mg/m ³



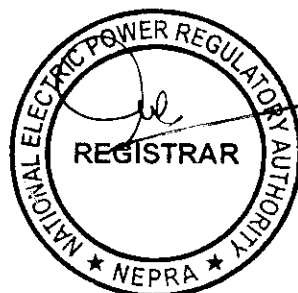
5. Cooling System

(i).	Cooling Water Source/Cycle	Sea Water/Double Circulation Close Cycle
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6. Plant Characteristics

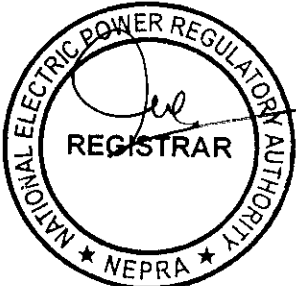
(i).	Generation Voltage	Barge-I		Barge-II	
		Unit 1~4	Unit 5~10	Unit 1~5	Unit 6~12
		10.5 KV	10.5 KV	10.5 KV	10.5 KV
(ii).	Frequency	50 Hz	50 Hz	50 Hz	50 Hz
(iii).	Power Factor	0.8	0.8	0.8	0.8
(iv).	Automatic Generation Control	Yes	Yes	Yes	Yes
(v).	Ramping Rate	15 KW/Sec	15 KW/Sec	15 KW/Sec	15 KW/Sec
(vi).	Time required to Synchronize to Grid and loading the complex to full load.	60 Min	60 Min	60 Min	60 Min

[Handwritten signatures]



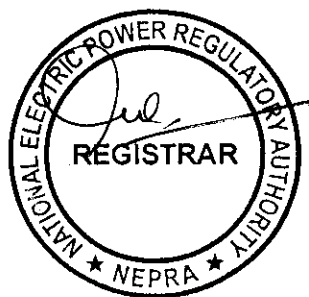
Rental Power Station of Walter Power International Pakistan

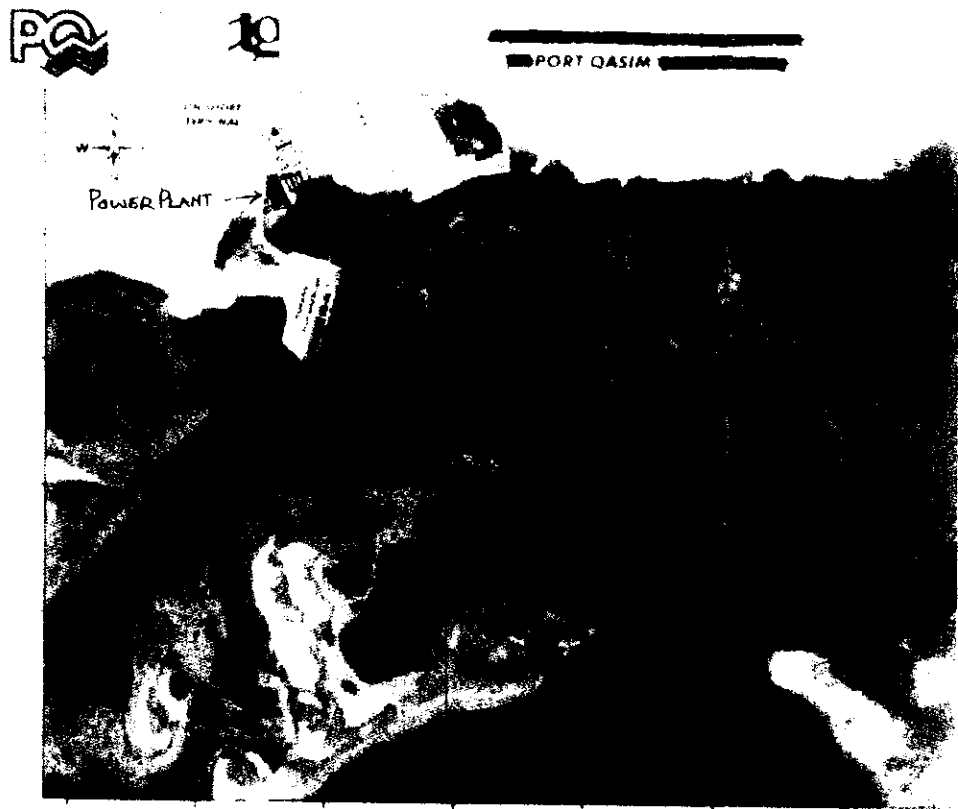
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NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
REGISTRAR
NEPRA

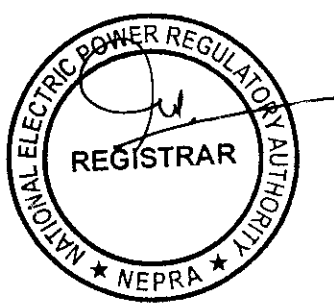
The Location, Size (Capacity in MW) Technology, Interconnection Arrangements, Technical Limits, Technical Functional Specifications and other details specific to Rental Power Station of Walter Power International Pakistan.

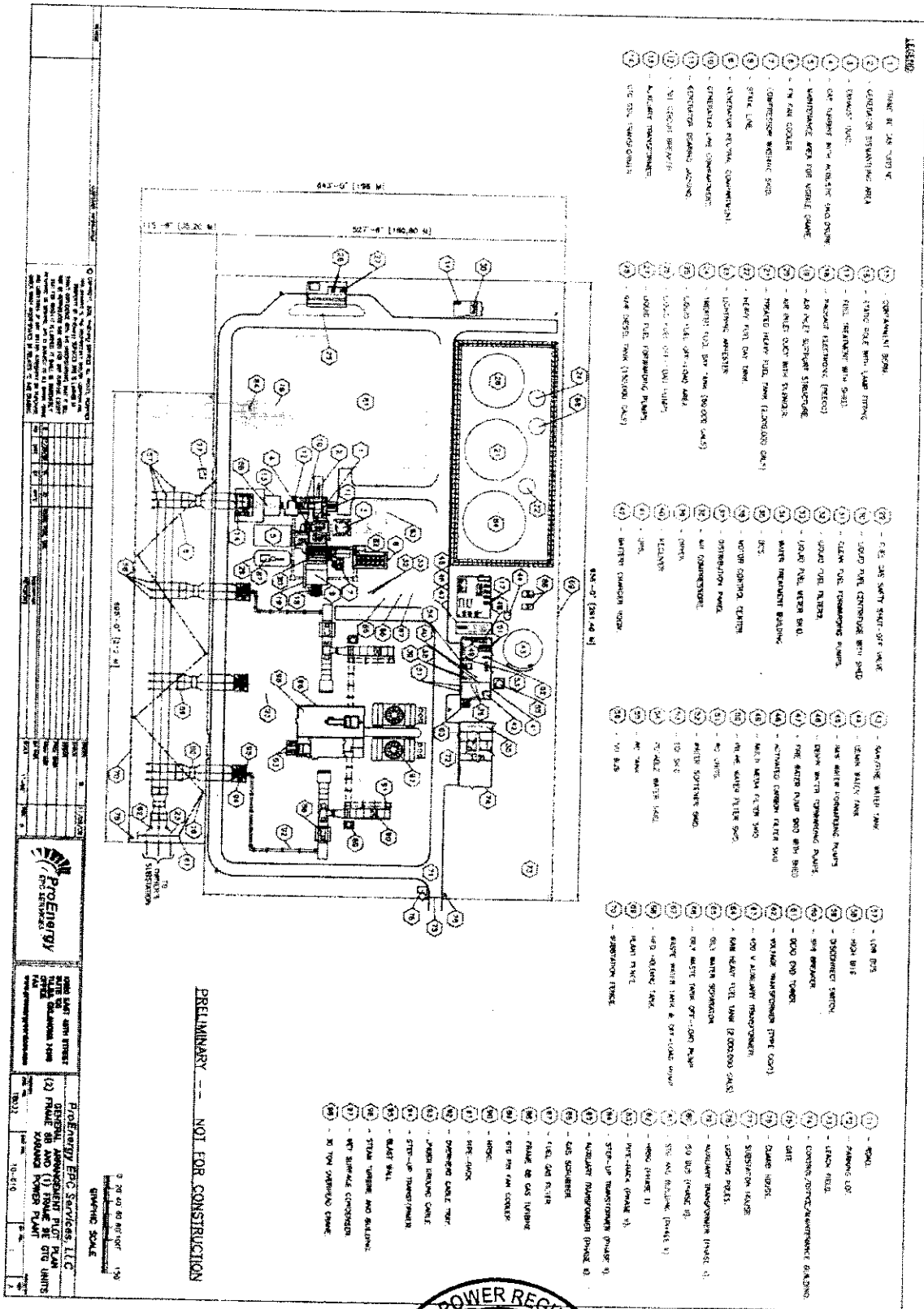




LOCATION PLAN
RENTAL POWER STATION KORANGI
WALTER POWER INTERNATIONAL

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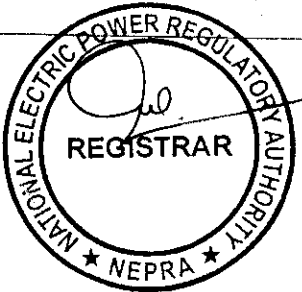


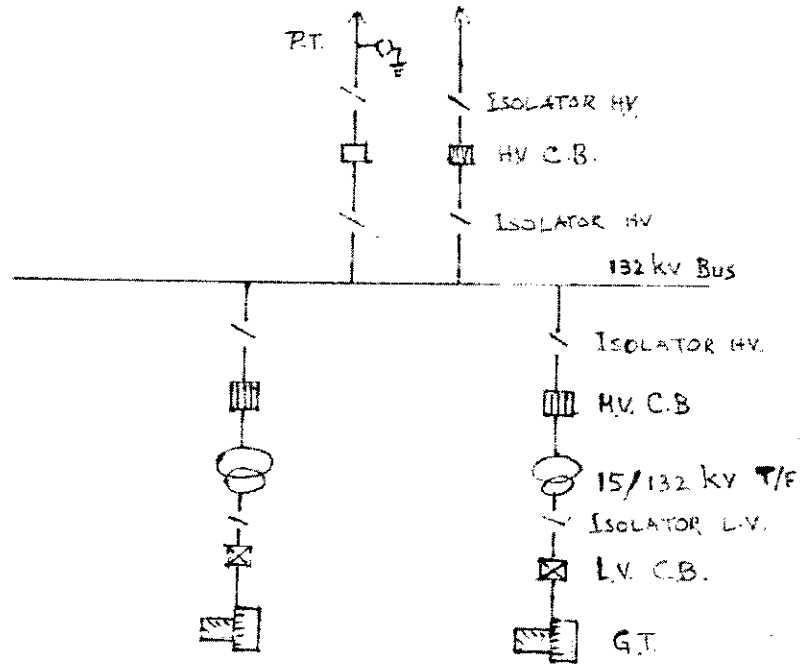


- LEGEND**
- 1 - FOUNDATION FOR TURBINE
 - 2 - CONDENSER STEAMING AREA
 - 3 - STEAMER TANK
 - 4 - COOLING WATER PUMP HOUSE
 - 5 - CONDENSER WATER PUMP HOUSE
 - 6 - CONDENSER WATER PUMP HOUSE
 - 7 - CONDENSER WATER PUMP HOUSE
 - 8 - CONDENSER WATER PUMP HOUSE
 - 9 - CONDENSER WATER PUMP HOUSE
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 - 12 - CONDENSER WATER PUMP HOUSE
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 - 70 - CONDENSER WATER PUMP HOUSE

PRELIMINARY -- NOT FOR CONSTRUCTION

ProEnergy Ergo Services LLC
 KHANOTE POWER PLANT
 KHANOTE POWER PLANT



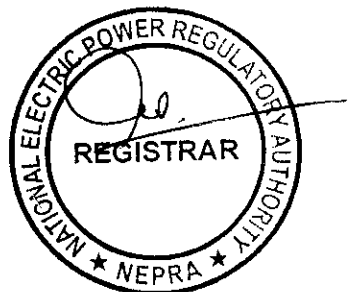


KORANGI RENTAL POWER STATION

SINGLE LINE DIAGRAM

(PRELIMINARY)

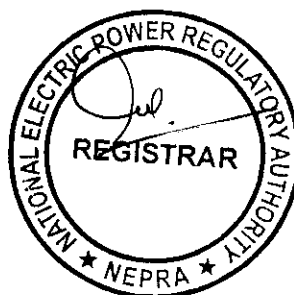
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**INTERCONNECTION SCHEME FOR THE POWER
DISPERSAL OF RENTAL POWER STATION OF
WALTER POWER INTERNATIONAL PAKISTAN.**§

The power generated from the power plant shall be dispersed to the load center of KESC by constructing two new 132 KV D/C Transmission for making double In-Out of the existing 132 KV D/C Transmission Line from Korangi Thermal Power Station (KTPS)-Landhi at Walter Power International Pakistan power plant.

§ As provided by LPGCL



Plant Details**

1. General Information

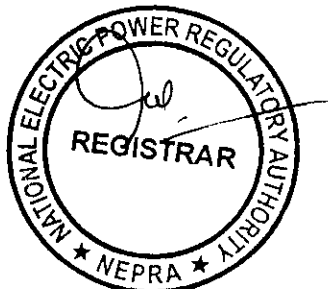
(i).	Name of Rental Company	Walter Power International Pakistan
(ii).	Plant Location	Korangi, Karachi
(iii).	Type of Generation Facility	Thermal Power Generation

2. Plant Configuration

(i).	Plant Size Installed Capacity (Gross ISO)	230.00 MW
(ii).	Type of Technology	Gas Turbine
(iii).	Number of Units/Size (MW)	2 x 115 MW
(iv).	Unit Make & Model	General Electric PG 9171
(v).	De-rated Capacity (at Mean Site Conditions)	215.00 MW
(vi).	Auxiliary Consumption	10.00 MW
(vii).	Commissioning and Commercial Operation Date (COD)	September 30, 2009
(viii).	Rental Period from Commissioning and COD	5 Years (i.e. 60 months from September 30, 2009 to September 29, 2014)

** As provided LPGCL





3. Fuel Details

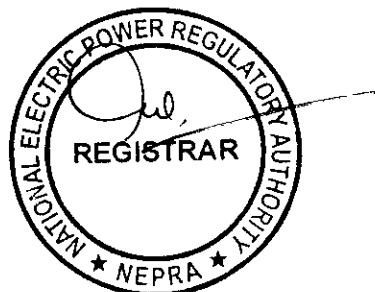
(i).	Primary Fuel	Residual fuel Oil (RFO)	
(ii).	Alternative/Back-up/ Start-Up Fuel	Diesel Oil (DO)	
(iii).	Fuel Source (Imported/Indigenous)	Imported	
(iv).	Fuel Supplier	PSO/Shell/Total PARCO	
(v).	Supply Arrangement	Through Tankers	
(vi).	No of Storage Tanks	Primary Fuel	Alternative/Back-up Fuel/Start-Up Fuel
		02	01
(viii).	Storage Capacity of each Tank	Primary Fuel	Alternative/Back-up Fuel/Start-Up Fuel
		7,500 m ³	600 m ³
(ix).	Gross Storage (total)	Primary Fuel	Alternative/Back-up Fuel/Start-Up Fuel
		15,000 m ³	600 m ³

4. Emission Values

(i).	SO _x	Primary Fuel	Alternative/Back-up Fuel/Start-Up Fuel
		3654 lb/hr	658.40 lb/hr
(ii).	NO _x	Primary Fuel	Alternative/Back-up Fuel/Start-Up Fuel
		203.80 lb/hr	208 lb/hr

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(iii).	CO	Primary Fuel	Alternative/Back-up Fuel/Start-Up Fuel
		29.86 lb/hr	29.77 lb/hr
(iv).	PM ₁₀	Primary Fuel	Alternative/Back-up Fuel
		10.00 lb/hr	10.00 lb/hr

5. Cooling System

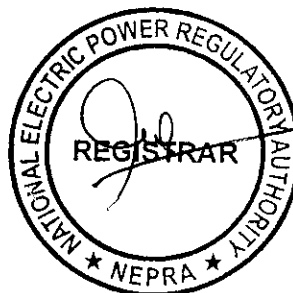
(i).	Cooling Water Source/Cycle	Reverse Osmosis Water Plant at Plant Site/Closed Loop
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6. Plant Characteristics

(i).	Generation Voltage	15 KV
(ii).	Frequency	50 Hz
(iii).	Power Factor	0.8 lagging ~ 0.95 leading
(iv).	Automatic Generation Control	Yes
(v).	Ramping Rate	105 KW/Sec
(vi).	Time required to Synchronize to Grid and loading the complex to full load.	15 ~ 18 Minutes







Modification to Schedule – II

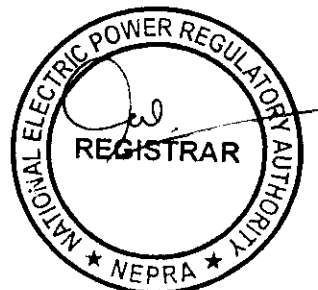
Of

Generation Licence No. GL/06/2005

In the name of

Lakhra Power Generation Company
Limited
(LPGCL)

(Annexure-B)



Modification to
Schedule-II of Generation Licence
No. GL/06/2005

The detail about the "Generation Capacity" given at page-2 of Schedule-II is hereby replaced in its entirety with the following:-

(A). LPGCL – 150 MW FBC Power Plant Khanote, District, Dadu

Unit No.	Date of Commissioning	Installed Capacity (MW)	De-rated Capacity (MW)	Net Capacity [†] After Auxiliary Consumption (MW)
1	March 23, 1994	50.00	40.00	31.00
2	September 28, 1994	50.00	40.00	31.00
3	December 23, 1994	50.00	40.00	31.00

(B). Rental Power Station of Karkey, Karadeniz Holdings, Turkey Near, Karachi.

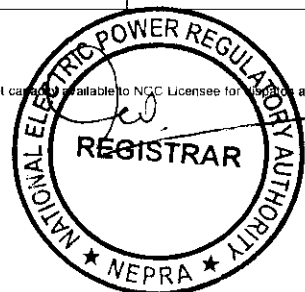
Barage No.	Unit No.	Date of Commissioning	Installed Capacity (MW)	De-rated Capacity (MW)	Net Capacity After Auxiliary Consumption (MW)
I	1	August 14, 2009	11.20	10.92	10.428
	2	August 14, 2009	11.20	10.92	10.428
	3	August 14, 2009	11.20	10.92	10.428
	4	August 14, 2009	11.20	10.92	10.428
	5	August 14, 2009	10.24	9.984	9.535
	6	August 14, 2009	10.24	9.984	9.535
	7	August 14, 2009	10.24	9.984	9.535
	8	August 14, 2009	10.24	9.984	9.535
	9	August 14, 2009	10.24	9.984	9.535

* Any two units can be operated at a time

† Indicative Figures only:- These figures have been based on historic average auxiliary consumption provided by the licensee. The net capacity available to NCC Licensee for its own and other purchasers will be determined through procedures contained in the Grid Code, applicable documents or bilateral contracts.

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	10	August 14, 2009	10.24	9.984	9.535
II	1	August 14, 2009	11.567	11.277	10.77
	2	August 14, 2009	11.567	11.277	10.77
	3	August 14, 2009	11.567	11.277	10.77
	4	August 14, 2009	11.567	11.277	10.77
	5	August 14, 2009	11.567	11.277	10.77
	6	August 14, 2009	12.125	11.822	11.29
	7	August 14, 2009	12.125	11.822	11.29
	8	August 14, 2009	12.125	11.822	11.29
	9	August 14, 2009	12.125	11.822	11.29
	10	August 14, 2009	12.125	11.822	11.29
	11	August 14, 2009	12.125	11.822	11.29
	12	August 14, 2009	12.125	11.822	11.29

(C). Rental Power Station of Walter Power International Pakistan (WPIP), Korangi Karachi

Unit No.	Date of Commissioning	Installed Capacity (MW)	De-rated Capacity (MW)	Net Capacity After Auxiliary Consumption (MW)
1	September 30, 2009	115.00	107.50	102.50
2	September 30, 2009	115.00	107.50	102.50

Grand Total (A+B+C+D)	628.95	577.723	529.802
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