



National Electric Power Regulatory Authority
Islamic Republic of Pakistan

2nd Floor, OPF Building, G-5/2, Islamabad.
Ph: 9206500, 9207200 Fax : 9210215
E-mail: office@nepra.org.pk

Registrar

No. NEPRA/R/LAG-77/1015-16

February 22, 2007

Director
Foundation Power Co. (Daharki) Ltd.
68 Tipu Road, Chaklala
Rawalpindi


Subject: **Generation Licence No. IGSP/06/2007**
Licence Application No. LAG-77
Foundation Power Company (Dahraki) Ltd. (FPCDL)

Please refer to your application No. PD-4033/Daharki dated 17.01.2006 to NEPRA for a Generation Licence.

2. Enclosed here is Generation Licence No. IGSP/06/2007 granted by the Authority to Foundation Power Company (Daharki) Ltd. The Licence is granted to you pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

3. Please quote above mentioned Generation Licence No. in your future correspondence with the Authority.

DA/as above.


22.02.07
(Mahjoob Ahmad Mirza)

Copy for information to Director General, Pakistan Environmental Protection Agency (Pak-EPA), House No. 311, Main Margalla Road, Sector F-11/3, Islamabad.

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

GENERATION LICENCE

No. IGSPL/06/2007

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:

Foundation Power Company Daharki Limited

Incorporated under the Companies Ordinance, 1984
Under Certificate of Incorporation

No. 00000004945/20051101 Dated November 10, 2005

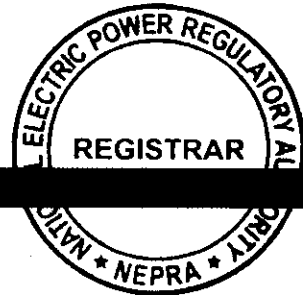
For its Plant at Daharki Sindh
(Installed Capacity: 179.05 MW Gross ISO)

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

Given under my hand this 22nd day of February, Two Thousand & Seven, and expires on 19th day of May, Two Thousand & Thirty Four.



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) "Licensee" means Foundation Power Company Daharki, Limited
- (d) "Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000.

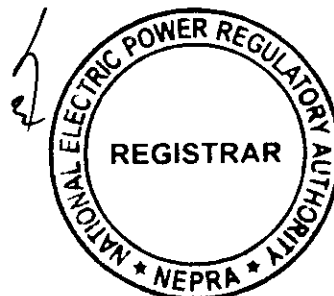
1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or in the Rules.

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 Licensee's generation facilities 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 of the generation facilities.

Article 4 Term

4.1 The Licence is granted for a term of twenty five (25) years after the commercial Operation date.

4.2 Unless revoked earlier, the Licensee may ninety days (90) days prior to the expiry of the term of the Licence, apply for renewal of the Licence under the Licensing (Application and Modification Procedures) Regulation, 1999

Article 5 Licence fee

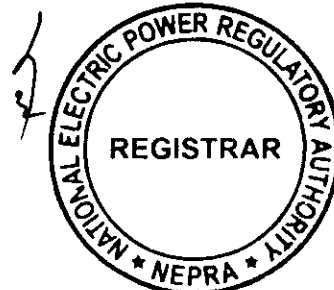
After the grant of the Generation Licence, the Licensee shall pay to the Authority the Licence fee, in the amount and manner and at the time set out in National Electric Power Regulatory Authority (Fees) Rules, 2002.

Article 6 Tariff

The licensee shall charge from its consumers only such tariff which has been approved by the Authority.

Article 7 Competitive Trading Arrangement

7.1 The Licensee shall participate in such measures 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 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 standards 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

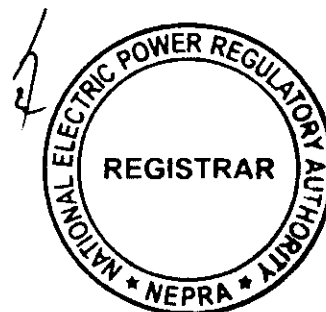
The Licensee shall conform to the relevant NEPRA rules on Performance Standards as may be prescribed by the Authority from time to time.

Article 10 Compliance with Environmental Standards

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

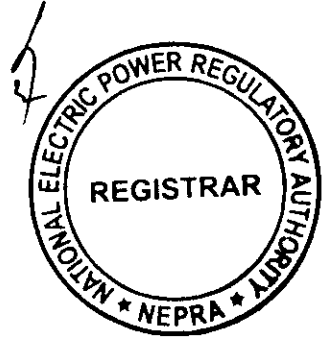
Article 11 Provision of Information

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



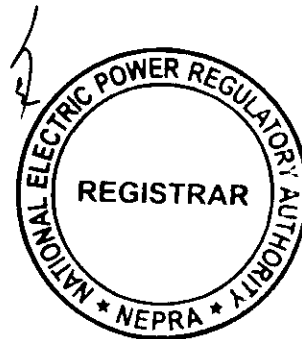
11.2 The licensee shall be subject to such penalties as may be specified in the relevant rules made by the Authority for failure to furnish such information as may be required from time to time by the Authority and which is or ought to be or have been in the control or possession of the licensee.

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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.



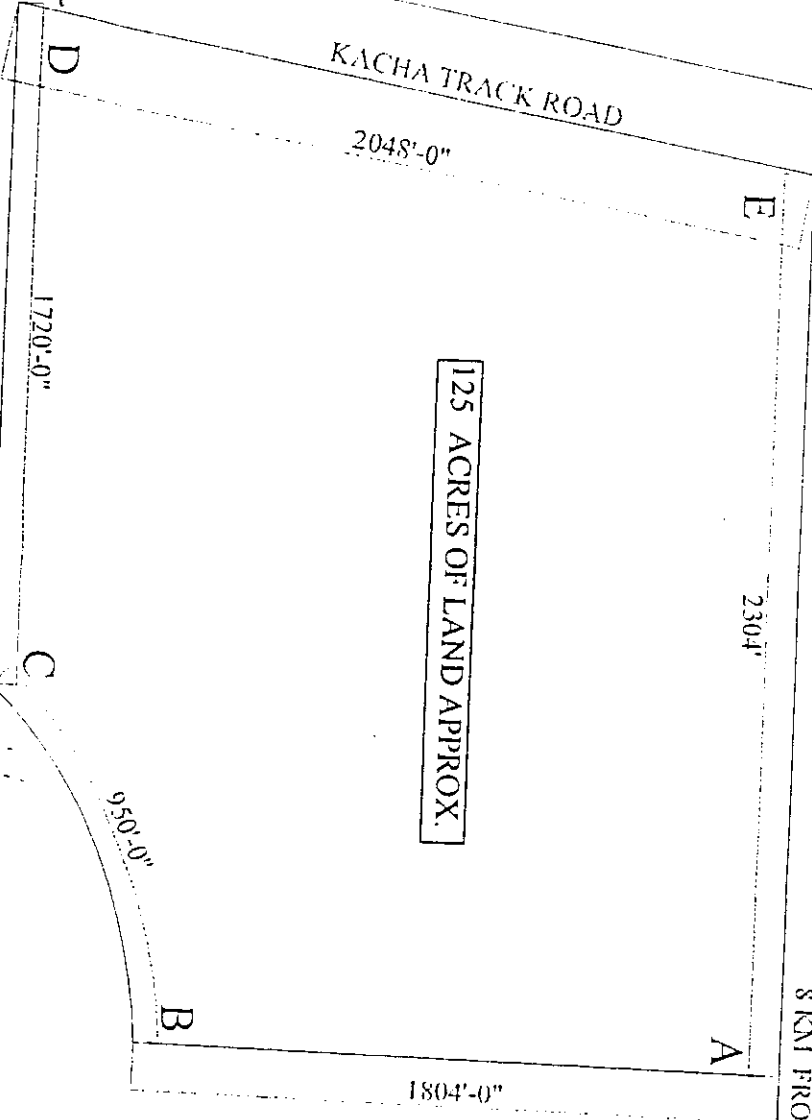
SITE MAP OF 175 MW FOUNDATION POWER COMPANY LIMITED.

NEW DAHAR WAI CANAL

DAV LEGHARI ROAD
 20'-0" WIDE

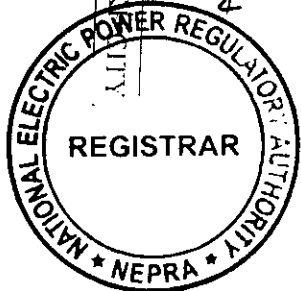
8 KM FROM DAHARKI CITY

125 ACRES OF LAND APPROX.



LENGEND OF COORDINATES

- A= 27°-59'-18" N
69°-40'-16" E
- B= 27°-59'-10" N
69°-40'-34" E
- C= 27°-58'-56" N
69°-40'-36" E
- D= 27°-58'-37" N
69°-40'-37" E
- E= 27°-58'-48" N
69°-40'-13" E



LEGEND

- 01 TURBINE BUILDING
- 02 GENERAL CONTROL AND ELECTRICAL BUILDING
- 03 GAS TURBINE GENERATOR BUILDING
- 04 UNIT AUXILIARY TRANSFORMER (UAT)
- 05 GT UNIT TRANSFORMER (GTU)
- 06 STEAM TURBINE GENERATOR (STG)
- 07 ST MAIN TRANSFORMER (STMT)
- 08 SURGE CONDENSER
- 09 CONDENSATE EXTRACTION PUMP
- 10 LOCAL RECOVERY STEAM REGENERATOR (LRS)
- 11 FEED WATER PUMP HOUSE
- 12 SUPPLY CONTAINER
- 13 CHEMICAL DOSING STATION
- 14 AIR COMPRESSOR HOUSE
- 15 FIRE TANK
- 16 EMERGENCY/BACKUP START DIESEL GENERATOR BUILDING
- 17 COOLING TOWER
- 18 COOLING WATER PUMP HOUSE
- 19 CW PUMP LOCAL ELECTRICAL ROOM
- 20 CW CONDENSING
- 21 RAW WATER AND FIRE WATER STORAGE
- 22 DIESEL SUPPLY OIL MAKE UP, DRIPPING WATER PUMP SHELTER
- 23 WATER TREATMENT PLANT
- 24 DEIONIZED WATER STORAGE TANK
- 25 CHEMICAL STORAGE TANK AND REGENERATION PIT
- 26 DRINKING/SERVICE WATER STORAGE TANK
- 27 FIRE PUMP SHELTER
- 28 FUEL GAS CONDENSING STATION (FCS)
- 29 LOCAL ELECTRICAL ROOM FOR EGCS
- 30 FUEL OIL UNLOADING STATION
- 31 FUEL OIL STORAGE TANK
- 32 FUEL OIL STORAGE TANK
- 33 FUEL OIL FORWARDING PUMP AND FOAM HOUSE
- 34 WORKSHOP AND STORE BUILDING (OUT OF EPC)
- 35 OUTDOOR STORAGE (OUT OF EPC)
- 36 SWITCH YARD
- 37 SWITCH YARD LOCAL CONTROL ROOM
- 38 EMERGENCY FORD (OUT OF EPC)
- 39 WASTE WATER MONITORING BASIN (OUT OF EPC)
- 40 OIL WASTE WATER TREATMENT PLANT
- 41 ADMINISTRATIVE BUILDING (OUT OF EPC)
- 42 STORAGE AREA
- 43 GATE HOUSE (OUT OF EPC)
- 44 FUSE WELP PUMP HOUSE
- 45 FUSE WELP PUMP HOUSE
- 46 LOCAL ELECTRICAL ROOM FOR WELP PUMP (REFER TO SHEET DRAWING)
- 47 WASTE WATER COLLECTION PIT (OUT OF EPC)

FOR REFERENCE

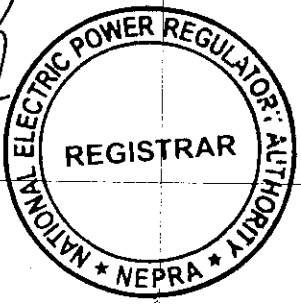
THIS DRAWING IS THE PROPERTY OF FOUNDATION POWER COMPANY. IT IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE COMPANY.

FOUNDATION POWER COMPANY
 (DAHARKI) LIMITED

DAHARKI COMBINED CYCLE POWER PLANT
 (175MW CCPP) PAKISTAN

NO.	REVISION	DATE	BY	CHKD.	APPD.
1	ISSUED FOR PERMITTING	15/08/2011
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NOTE: ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
 THE LINES AND DIMENSIONS OF ALL PLANT AND EQUIPMENT SHOWN ARE APPROXIMATE AND SUBJECT TO CHANGE AT THE DISCRETION OF THE ENGINEER.



DAHARKI-SFYD-Y-001

DAHARKI-SFYD-Y-001

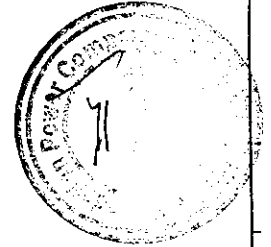
FOR REFERENCE

LEGEND

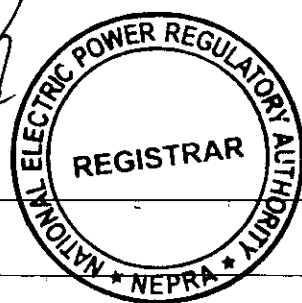
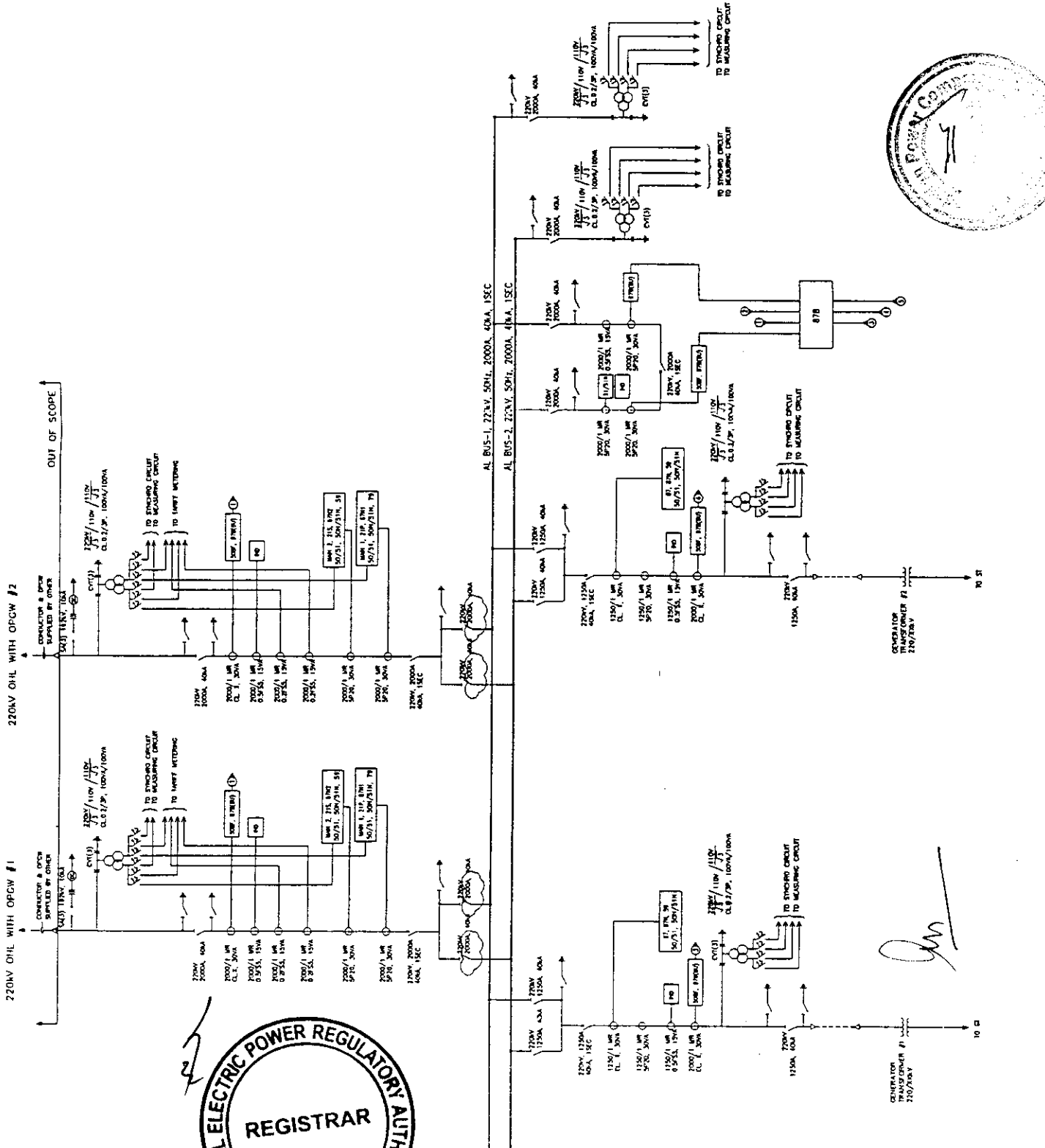
- 216 DISTANCE PROTECTION FOR O/L FEEDER - MAIN 1
- 217 DISTANCE PROTECTION FOR O/L FEEDER - MAIN 2
- 218 DIRECTIONAL OVERCURRENT PROTECTION - MAIN 1
- 219 DIRECTIONAL OVERCURRENT PROTECTION - MAIN 2
- 220 PHASE AND EARTH OVERCURRENT - MAIN 1
- 221 PHASE AND EARTH OVERCURRENT - MAIN 2
- 222 OVERCURRENT PROTECTION - MAIN 1
- 223 OVERCURRENT PROTECTION - MAIN 2
- 224 GENERATOR/TRANSFORMER DIFFERENTIAL PROTECTION
- 225 LOW IMPEDANCE SUBRA PROTECTION
- 226 CONTROL UNIT FOR LOW IMPEDANCE SUBRA PROTECTION
- 227(1) AUT UNIT FOR LOW IMPEDANCE SUBRA PROTECTION
- 227(2) AUT UNIT FOR LOW IMPEDANCE SUBRA PROTECTION
- 228 PROTECTION/RESTRAINT

NOTE: THE RATING AND DATA OF EACH DEVICE AS SHOWN AND MENTIONED IN THIS DRAWING AND PROTECTION FUNCTION ETC. MAY BE CHANGED DURING DETAILED DESIGN.

REV.	DATE	DESCRIPTION	PREPARED BY	CHECKED BY	CLIENT
1	14 DEC 08	ISSUED FOR R/O			
2	14 JAN 09	ISSUED FOR R/O			



[Handwritten Signature]



GENERATOR TRANSFORMER #1
220/220KV

GENERATOR TRANSFORMER #2
220/220KV

NOTE

- Legend
- Circuit Breaker
 - Step Transformer
 - Busbar
 - Line
 - Motor
 - Impedance
 - Generator
 - Control
 - AUTOMATIC START TRANSFER SWITCH
 - MANUAL TRANSFER SWITCH
 - REFERENCE SYMBOL

FOR PROPOSAL

THIS DRAWING IS THE PROPERTY OF NEPRA. IT IS NOT TO BE COPIED OR USED IN ANY WAY WITHOUT THE PERMISSION OF NEPRA.

FOUNDATION POWER COMPANY (DAHARKI) LIMITED

DAHARKI COMBINED CYCLE POWER PLANT
 (175MW CCCTP)

ELECTRICAL
 KEY SINGLE LINE DIAGRAM

FOUNDATION POWER COMPANY (DAHARKI) LIMITED

DAHARKI COMBINED CYCLE POWER PLANT (175MW CCCTP)

ELECTRICAL KEY SINGLE LINE DIAGRAM

PROJECT NO. TP-002-EL-001

DATE: 15/05/2005

SCALE: 1:1

DESIGNED BY: [Name]

CHECKED BY: [Name]

APPROVED BY: [Name]

PROJECT NO. TP-002-EL-001

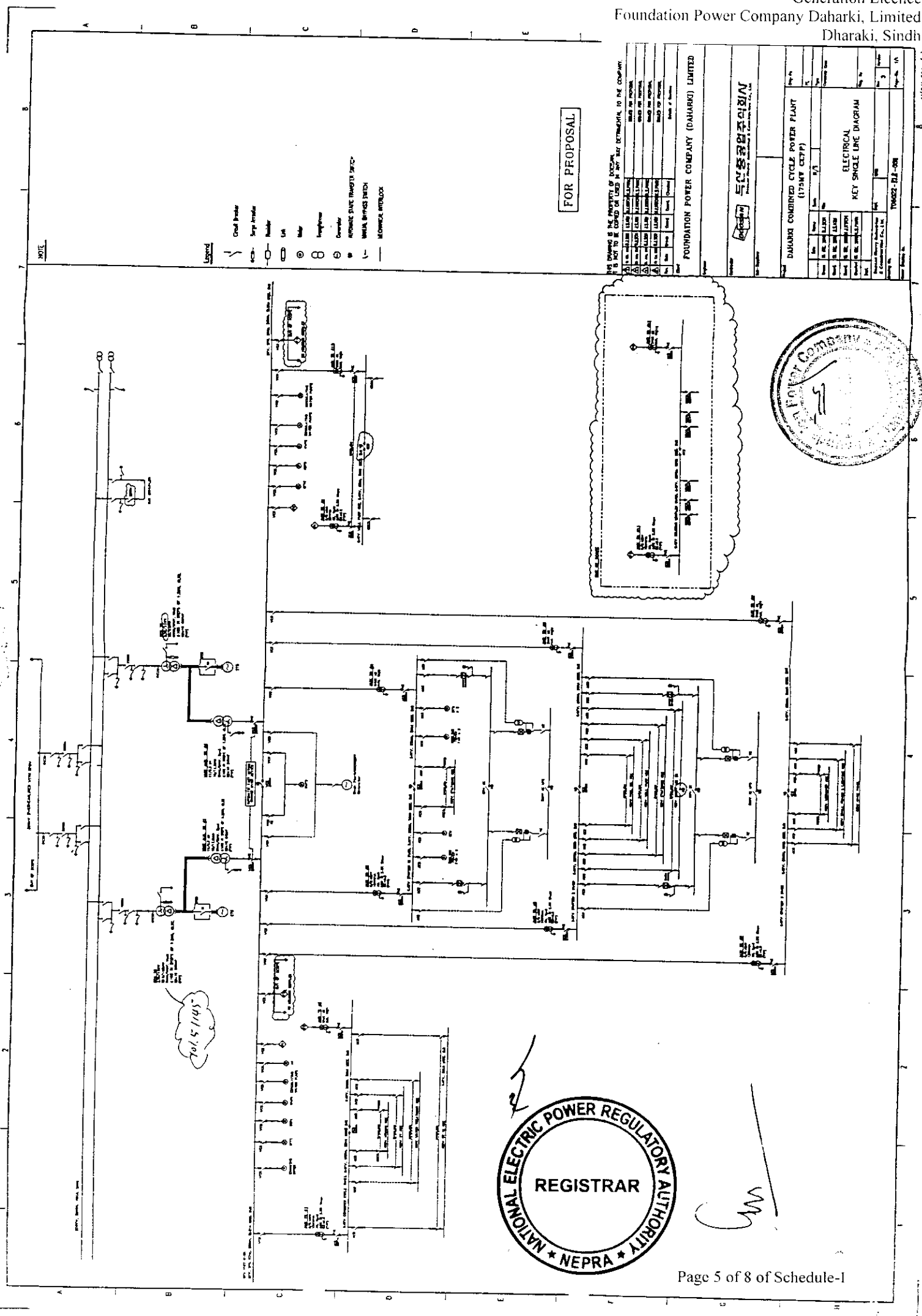
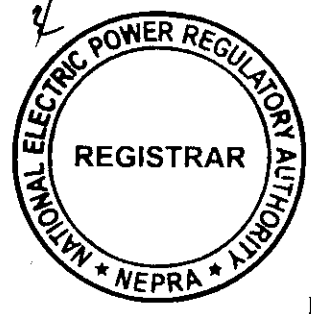
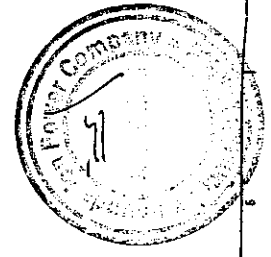
DATE: 15/05/2005

SCALE: 1:1

DESIGNED BY: [Name]

CHECKED BY: [Name]

APPROVED BY: [Name]



Plant Details*

1. General Information

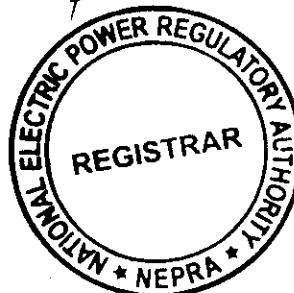
i.	Name of Applicant	Foundation Power Company (Daharki) Limited
ii.	Registered Office	Fauji Towers, 68 Tipu Road, Chaklala, Rawalpindi
iii.	Plant Location	Approx. 8 km from Daharki city on Dad Leghari Road
iv.	Type of Generation Facility	Thermal Generation (Combined Cycle)

2. Plant Configuration

i.	Plant Size Installed Capacity Gross ISO	179.05 MW
ii.	Type of Technology	Combined Cycle Power Plant
iii.	Number of Units/Size (MW)	1x114.9 MW (Gas Turbine) 1x64.15 MW (Steam Turbine)
iv.	Unit Make & Model	Gas Turbine – GE9171E Steam Turbine – Fauji Japan/FTE
v.	De-rated Capacity at site conditions	177.54 MW
vi.	Auxiliary Consumption	6.057 MW
vii.	Commissioning and Commercial Operation date	20-05-2009 (Tentatively)
viii.	Expected Life of the Facility from Commercial Operation Date	25 Years

* As provided by the Applicant

(Handwritten signatures)



3. Fuel Details

i.	Primary Fuel	Low Btu Gas (517 – 540 Btu/Scf)
ii.	Back-up Fuel	High Speed Diesel (HSD)
iii.	Fuel Source (Imported/Indigenous)	Indigenous
iv.	Fuel Supplier	Mari Gas Company Limited (MGCL)
v.	Supply Arrangement	By a Gas Pipelines from Mari Gas Fields
vi.	No of Storage Tanks of Backup Fuel (HSD)	01
vii.	Storage Capacity of each HSD Tank	6500 m ³
viii.	Gross Storage of HSD	6500 m ³ (Net Storage)

4. Emission Values

i.	SO _x	SO ₂ : 35**
ii.	NO _x	115 mg/Nm ³ at 15% dry O ₂ (by %volume)
iii.	PM ₁₀	50 mg/Nm ³

**0.2 metric tons per day (tpd) per MWe of capacity

5. Cooling System

i.	Cooling Water Source/Cycle	Well and/or Canal water / Close Cycle (Cooling Tower)
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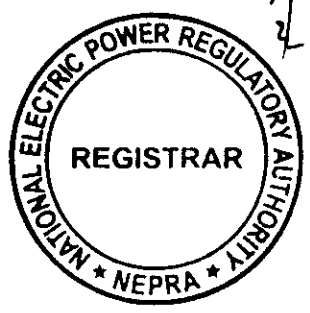
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1



6. Plant Characteristics

i.	Generation Voltage	10.5 kV – 15 kV		
ii.	Frequency	50 Hz		
iii.	Power Factor	0.8 Lagging – 0.95 Leading		
iv.	Automatic Generation Control	Yes		
v.	Ramping Rate	To be provided later on		
vi.	Time required to Synchronize to Grid and loading the complex to full load.	Open Cycle Mode		
		Ventilating	To be provided later on	
		Speed up to 3000 r.p.m		
		Synchronization		
		Combined Cycle Mode		To be provided later on
		Cold Start (from filling of drum to synchronization)		
		start up time from synchronization till base load operation		
		Start up		
Cold Start time (total approx.)				

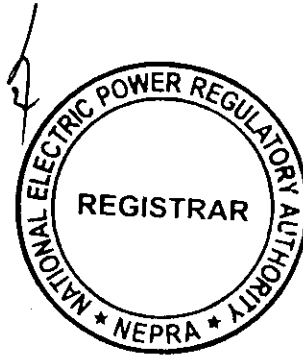
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 [Signature] [Initials] [Initials] [Initials] [Initials]



SCHEDULE-II

The net capacity of the Licensee's Generation Facilities

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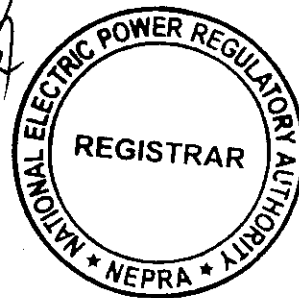
SCHEDULE-II*

1.	Installed Capacity Gross ISO	179.05 MW
2.	De-rated Capacity at Site Conditions	177.54 MW
3.	Auxiliary Consumption	6.057 MW
4.	Net Capacity of the Plant at Site Conditions	171.483 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 Agreements or Grid Code.

[Handwritten signatures]




* As provided by the applicant

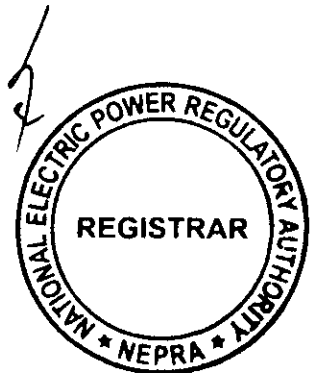
INTERCONNECTION SCHEME FOR THE
POWER DISPERSAL OF THE PLANT**

The power of the power plant shall be dispersed to system directly within HESCO load center at 220/132 KV voltage level as follows:-

1. A new 220/132 KV Grid station (Rohri New) with 2x160 MVA, 220/132 KV transformer, approximately 5Km away from existing Rohri grid towards Kahirpur.
2. A new 220 KV D/C (Twin Bundled) Rail Conductor with an approximate length of 115 KM connecting New 220 KV Rohri Grid Station with Proposed Thermal Power Plant of M/s Foundation Power Company Dharki Limited.
3. A double circuit In-Out arrangement on Lynx measuring approximately 2 KM of the existing 132 KV D/C transmission line from Rohri to Khairpur/Gumbat at the new 220 KV Rohri Grid Station.



* As proposed in the feasibility report submitted by the applicant and agreed by NTDC vide letter no. COO/CPA/CE-II/3079, dated March 29, 2006.

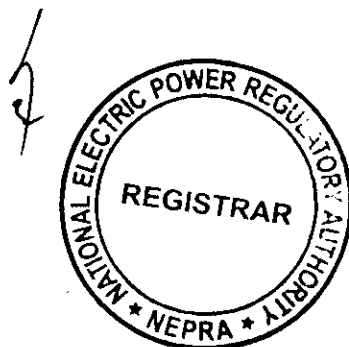


**FINALIZATION OF LOCATION AND CAPACITY IN THE MATTER OF GRANT OF
GENERATION LICENCE TO
FOUNDATION POWER COMPANY (DAHARKI) LIMITED**

Foundation Power Company (Daharki) Limited (FPCDL), a wholly owned subsidiary of Fauji Foundation, filed an application for grant of Generation Licence under Section 15 of NEPRA Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997), for setting up a 202 MW (Gross ISO) Combined Cycle Power Plant utilizing low Btu (517-540 Btu/SCF) gas. Initially the plant was proposed to be located at a distance of 2.5 km from Kobhar Railway Station on Lahore-Karachi railway line, district Daharki Province of Sindh.

2. A determination was made by the Authority on July 13, 2006 for the grant of Generation Licence based on documentation provided by the Company for capacity of 202 MW (Gross ISO), 184 MW de-rated on site and 180 MW net capacity. The location indicated by FPCDL was at a distance of 2.5 KM from Kobhar Railway Station in District Daharki.

3. Prior to issuance of Generation Licence by the Registrar, FPCDL requested for a reopening of the tariff proceedings indicating a revised site location and reduced installed ISO capacity. The revised installed capacity was indicated as 179.05 MW; de-rated (site) capacity 177.54 MW and net capacity 171.483 MW, with auxiliary consumption as 6.057 MW. The location was also changed (from the earlier "2.5 Km from Kobhar Railway Station") to "8 Km from Daharki city" on Dad Laghari Road, in District Daharki.



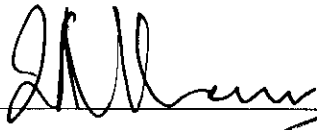
4. The issuance of the Licence by the Registrar was put on hold vide Authority decision dated 06-10-2006 till finalization of the location and capacity under consideration in the tariff determination case. The Authority gave its determination on tariff on October 21, 2006 based on the revised net capacity of 171.483 MW.

5. The matter regarding revision in net capacity and change in location was also referred to PPIB in response to which PPIB has given their "No Objection" to the grant of Generation Licence.


6. The Authority has considered the matter and approves the incorporation of the revised information with respect to location and capacity(ies) in Schedule-I, Schedule-II and Interconnection Arrangements as attached to this determination. Generation Licence to Foundation Power Company Daharki Limited be issued by the Registrar accordingly.

Authority

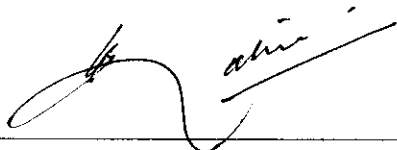
Zafar Ali Kahn
Member


_____ 22/2/07

Nasiruddin Ahmed
Member

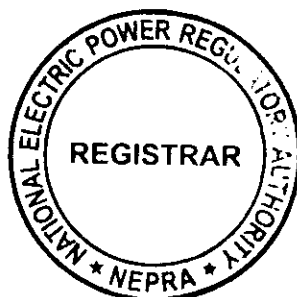


Abdul Rahim Khan
Member



Lt. Gen. (R) Saeed uz Zafar
Chairman





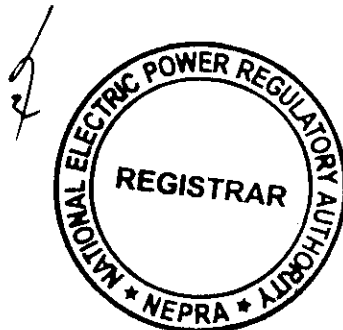


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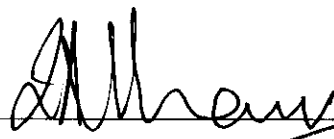
4. The issuance of the Licence by the Registrar was put on hold vide Authority decision dated 06-10-2006 till finalization of the location and capacity under consideration in the tariff determination case. The Authority gave its determination on tariff on October 21, 2006 based on the revised net capacity of 171.483 MW.

5. The matter regarding revision in net capacity and change in location was also referred to PPIB in response to which PPIB has given their "No Objection" to the grant of Generation Licence.

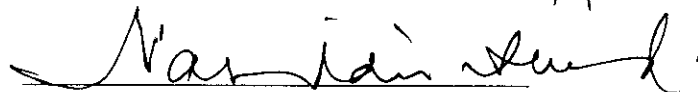
6. The Authority has considered the matter and approves the incorporation of the revised information with respect to location and capacity(ies) in Schedule-I, Schedule-II and Interconnection Arrangements as attached to this determination. Generation Licence to Foundation Power Company Daharki Limited be issued by the Registrar accordingly.

Authority

Zafar Ali Kahn
Member


22/2/07

Nasiruddin Ahmed
Member



Abdul Rahim Khan
Member



Lt. Gen. (R) Saeed uz Zafar
Chairman

