



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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

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E-mail : office@nepra.org.pk

Direct Phone : (051) 9206500

No. NEPRA/R/LAG-29/12515-6

January 1, 2005

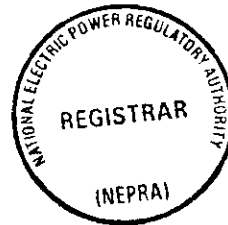
The Director
DHA Cogen Limited
D-35, Block 5, Clifton,
Karachi

Subject: **Grant of Generation Licence IGSP/01/2005**
Licence Application No. LAG - 29
M/s. DHA Cogen Ltd. (DCL)

Please refer to your application No. nil, dated September 08, 2004 to NEPRA for a Generation Licence.

2. Enclosed here is Generation Licence No. IGSP/01/2005 granted by the Authority to M/s. DHA Cogen Ltd (DCL). 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. DCL is allowed to sell power to KESC (Annex-I refers).
4. Please quote above mentioned Generation Licence No. in your future correspondence with the Authority.

DA/as above.



Mahjoob Ahmad Mirza
422
01.01.05
(Mahjoob Ahmad Mirza)

Copy for information to Director General, Pakistan Environmental Protection Agency,
44-E, Office Tower, Blue Area, Islamabad.

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

GENERATION LICENCE

No. IGSPL/01/2005

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:

DHA Cogen Limited
(Installed Capacity: 94 MW)

Incorporated under the Companies Ordinance, 1984
Under Certificate of Incorporation

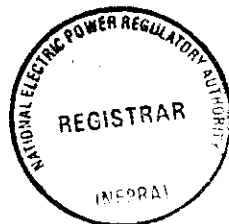
No. K-09200 of 2002-2003 Dated 29-1-2003

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

Given under my hand this 1st day of January, Two Thousand & Five, and expires on 31st day of December, Two Thousand & Thirty Four.



Registrar



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Article 1 Application of Rules

Save as expressly provided otherwise, the provisions of the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 as amended from time to time shall apply to this Licence.

Article 2 Definitions

Unless there is anything repugnant in the subject or context and save as expressly defined hereinafter, words and expressions used in this Licence bear the respective meanings given thereto in the Act or in the Rules.

Article 3 Grant of Licence

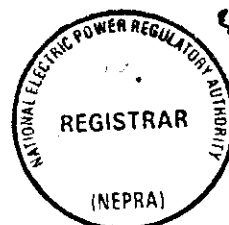
- 3.1 The location, size (capacity in MW), technology, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facilities of the licensee are set out in Schedule 1 to this Licence.
- 3.2 The net capacity of the licensee's generation 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 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 5 Term and renewal of Licence

This Licence is granted for a term of 30 years after the commercial operation date.



**Article 6
Tariff**

The licensee shall charge only such tariff which is either approved or specified 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:

- (a) any contract entered into by and between the Licensee and another party prior to the enactment of the Act and for the due performance of which a sovereign guarantee has been provided by the Government of Pakistan; or
- (b) any contract entered into subsequent to the enactment of the Act 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
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.

Handwritten marks and a circular stamp. The stamp is from the National Electric Power Regulatory Authority (NEPRA) and is signed by the Registrar. There are also some handwritten initials or marks to the left of the stamp.

Article 9
Compliance with Environmental Standards

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

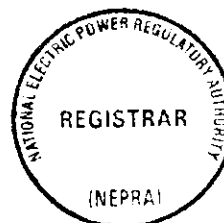
Article 10
Maintenance of record

- 10.1 The licensee shall keep complete and accurate record and the data in respect of all aspects of the generation business in their original as well as in electronic form.
- 10.2 Without prejudice to the provisions of sub-rule 15(3) of the Rules, unless provided otherwise under the law or the applicable documents, all record and data shall be maintained for a period of 5 years after the creation of such record or data. The licensee shall not destroy or dispose off any such record or data after the aforesaid period without thirty days prior written notice to the Authority. The licensee shall also not dispose off or destroy any record or data which the Authority directs the licensee to preserve.
- 10.3 All record and data maintained in an electronic form shall, subject to just claims of confidentiality, be accessible to the staff authorized by the Authority.

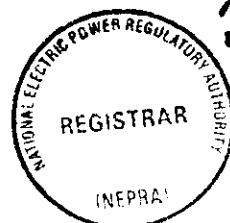
Article 11
Provision of Information

Without prejudice to the obligation of the Licensee to comply with any call for information made by the Authority from time to time under section 44 of the Act, the Licensee shall submit to the Authority the following statements of availability of the generation facilities:

- (1) Within three (3) months of the beginning of a financial year, the licensee shall prepare and submit before the Authority for its approval, the criteria upon which the licensee will:
- (a) determine the duration and timing of planned outages of generation units;



- (b) determine which hours of the day and days of the week a generation unit which is not subject to a planned outage will be sufficiently manned to be capable of being made available;
 - (c) determine its policy for making available generation units which are not subject to planned outages; and
 - (d) determine its policy for the temporary or permanent closure of generation units.
- (2) No later than one (1) month before the end of a financial year, the licensee shall submit to the Authority a written forecast for each generation unit expected to operate in the following financial year stating:
- (a) the net capacity of the unit;
 - (b) the planned outage schedule of each unit;
 - (c) best estimates of unplanned outages for each unit;
 - (d) the means by which the unit will be fuelled or expected to be primarily fuelled in the case of dual firing units;
 - (e) best expectation of any unplanned outages; and
 - (f) the factors known to the licensee likely to affect the number of outages.
- (3) No later than six (6) months into each financial year, the licensee shall submit to the Authority any changes to the best estimates submitted to the Authority under Article 11 (2) above with respect to the remainder of the financial year.
- (4) Within three (3) months of the beginning of each financial year, the licensee shall submit to the Authority a statement of actual availability of each generation unit during the previous financial year. The said statement shall compare forecasts and plans made for the previous financial year against outturns.



SCHEDULE-I

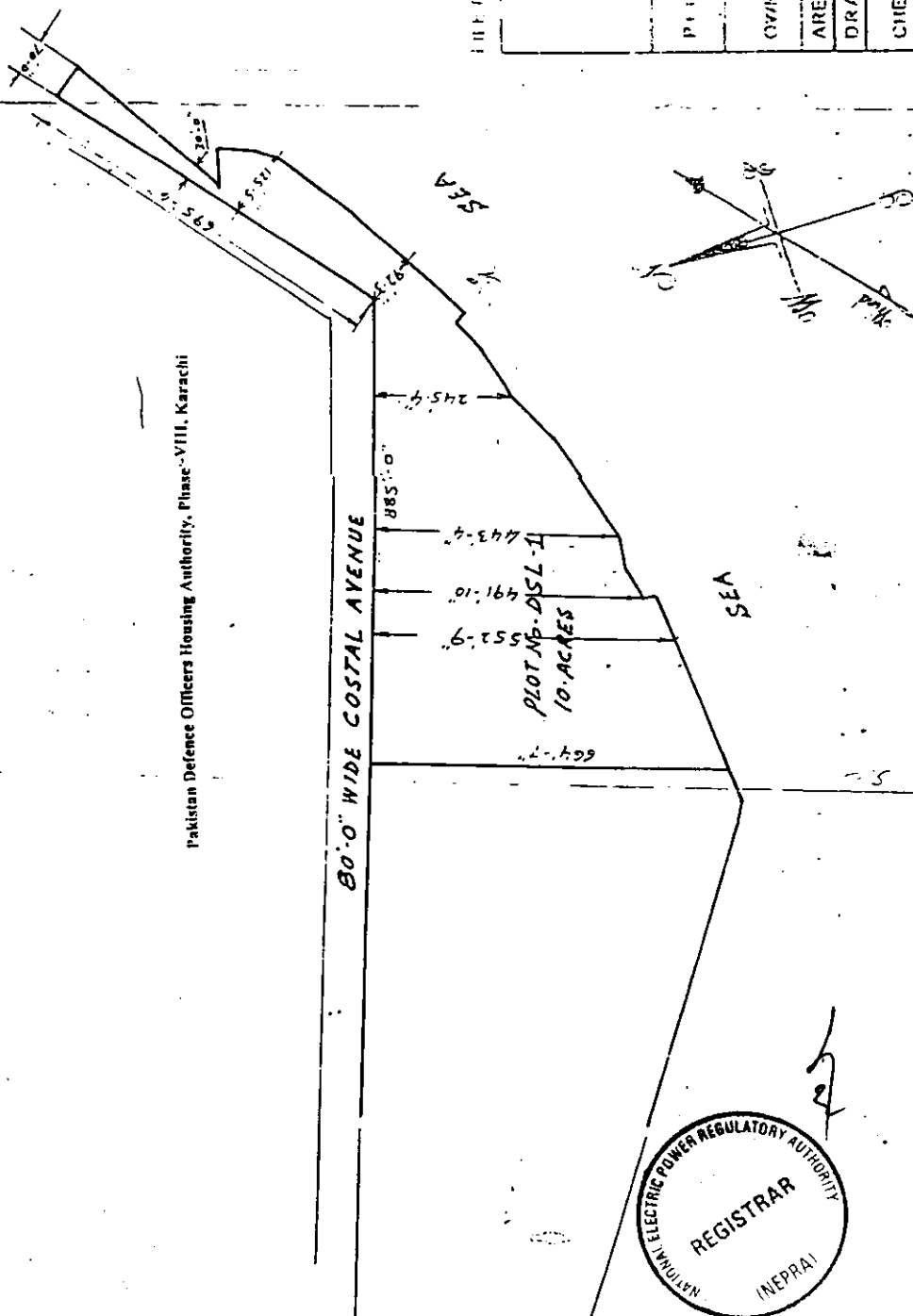
The location, size (capacity in MW) technology interconnection arrangements, technical limits technical functional specifications and other details specific to the generation facilities of the licensee

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ANNEXURE-I
Plant Location Map

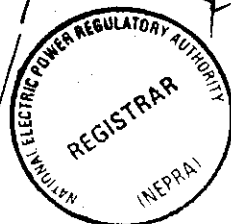
SITE FOR COMBINED POWER
GENERATION AND DESALIN-
ATION PROJECT DHA



Pakistan Defence Officers Housing Authority, Phase-VIII, Karachi

60'-0" WIDE COASTAL AVENUE

PLOT No. DSL-I
10 ACRES



REVISED
PROVISIONAL

Site plan is provisional and subject to approval of the relevant authorities. It is valid for two years only.

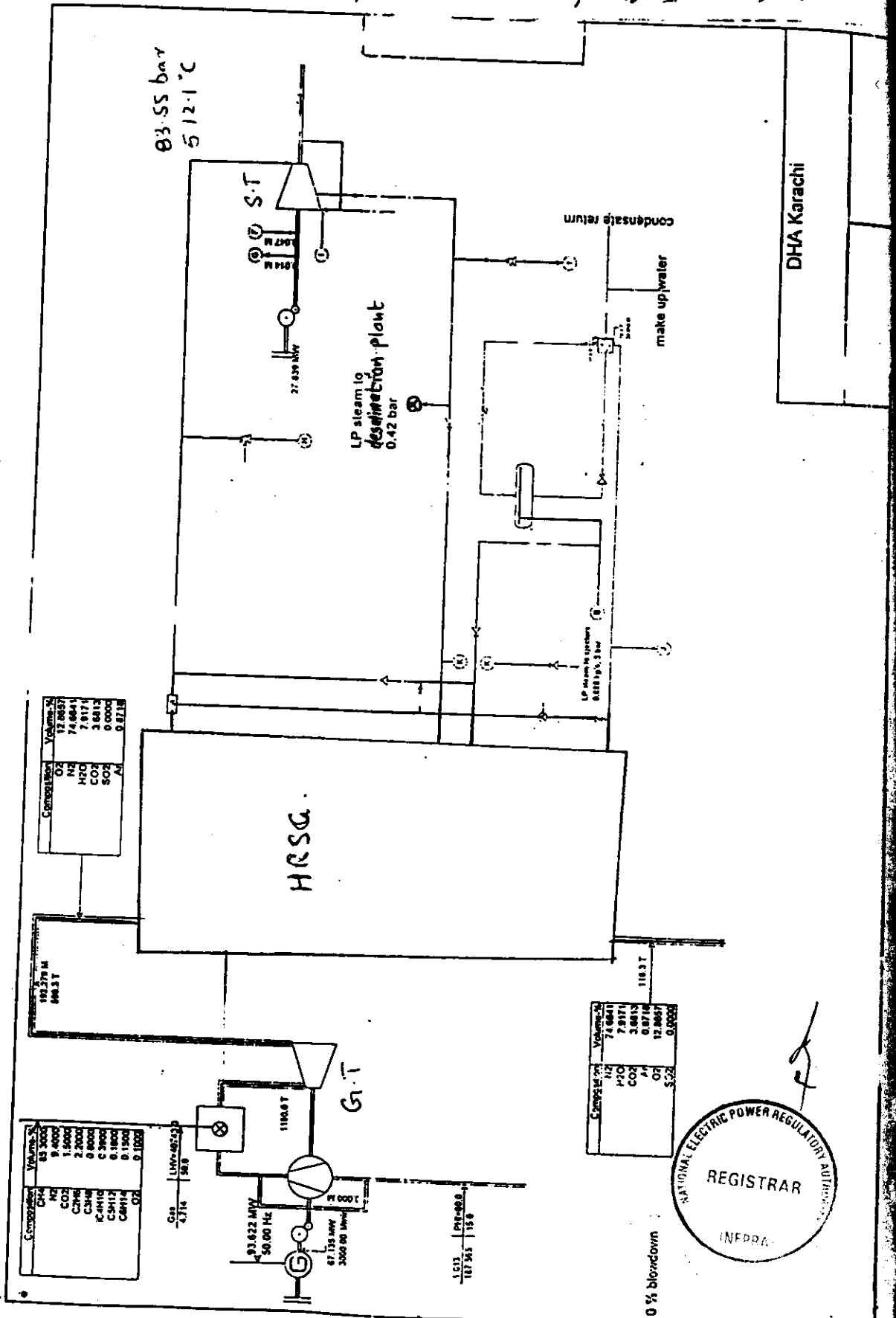
PROJECT NAME Pakistan Defence Officers Housing Authority KARACHI		SCALE NTS	DATE 19-08-2004	APPROVED BY <i>[Signature]</i> DIRECTOR PLANNING
PLANNING NO. DSL-I	PHASE PH - VIII	AREA 10 ACRES	SO YDS	
OWNER P. D. O. H. AUTHORITY	DRAWN BY <i>[Signature]</i>	CHECKED BY <i>[Signature]</i>	DATE 19-08-2004	SECRETARY <i>[Signature]</i>
PROJECT LOCATION COASTAL AVENUE		PROJECT NO. D HDM 19-8-04	DATE OF PLAN 19/8/04	

[Signature]
DIRECTOR PLANNING

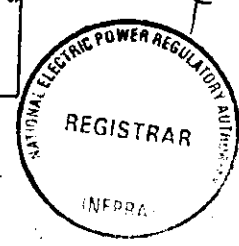
[Signature]
SECRETARY

ANNEXURE-XI
Process Flow Sheet for Power Plant/Plant Layout

3A. ISO = 15°C / 100% LOAD / 0% BLOW-DOWN



DHA Karachi

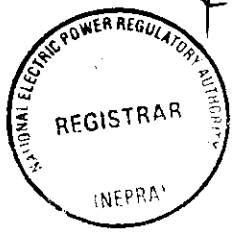
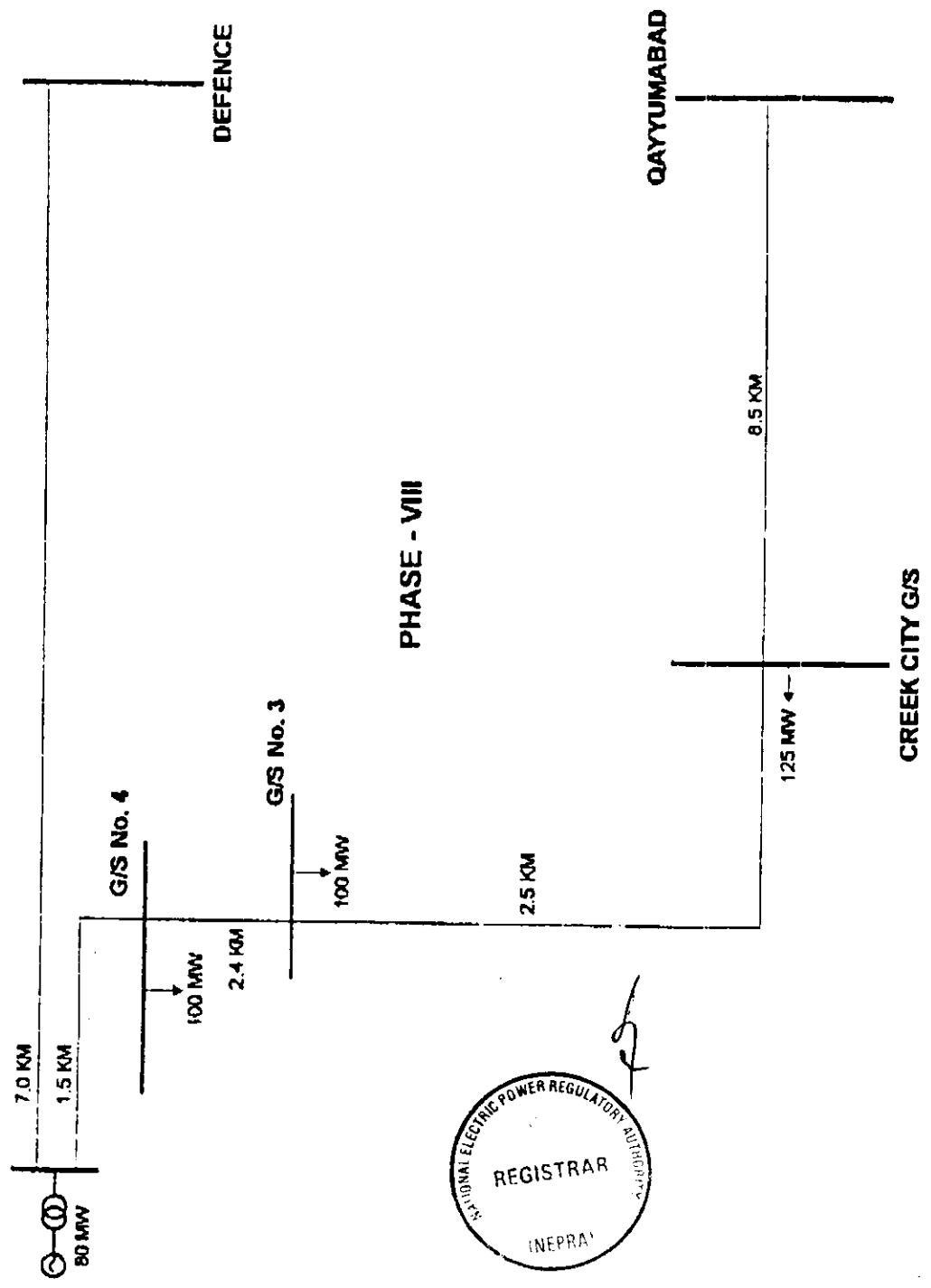


Legend
 132 KV U/G TL

Rev.:	0	Date:	October 2004	Drawn By:	DAVID/03/003
Checked:	Muhammad Iqbal	Checked:	Sajid Haidar	Approved By:	M. Zaheer
ÉLAN ÉLAN PARTNERS					

**Power Plant Inter Connection
 Schematic Layout**

Client: **Élan Cogen Ltd.**



PLANT DETAILS

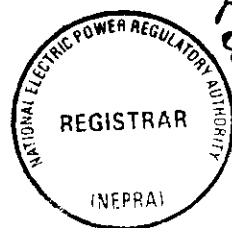
- | | | |
|----|-------------------|--|
| 1. | Name of Applicant | DHA Cogen Limited |
| 2. | Registered Office | D-35, Block-5, Clifton, Karachi. |
| 3. | Plant Location | Plot No. DSL-1, Coastal Avenue,
Phase VIII, Defence, Karachi. |
| 4. | Type of Facility | Thermal (Combined Cycle) |

Plant Configuration

- | | | |
|-----|---|--|
| 5.a | Plant size | 94 MW |
| 5.b | Type of Technology | Combined Cycle Technology |
| 5.c | Number of Units/Size | (i) One Gas Turbine (67 MW)
(ii) One Steam Turbine (27 MW) |
| 5.d | Unit Make and Model
Date of Manufacture. | (i) Siemens Gas Turbine, V64.3 Type, 2005
(ii) Siemens, condensing type, 2005 |
| 5.e | Required Commercial
Operation Date | 27 Months after Financial Close |

Fuel Use

- | | | |
|------|-----------------------------|----------------------------------|
| 6.a. | Fuel Type | Natural Gas |
| 6.b | Fuel (imported/ indigenous) | Indigenous |
| 6.c | Fuel Supplier | SSGC |
| 6.d | Supply Agreement | Yes , 20 inch diameter pipe line |
| 6.e | No. of Tanks | Not Applicable |
| 6.f | Storage Capacity/Tank | Not Applicable |
| 6.g | Gross Storage | Not Applicable |



Emission Values

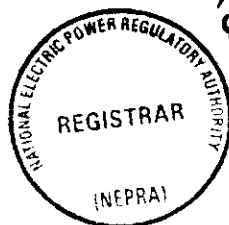
7.a	SO _x	Zero ppm
7.b	NO _x	34 ppm
7.c	CO	31 ppm
7d.	Particulate	0.2 mg/Nm ³
8	Cooling Water Source	Sea Water
9.	Installed Capacity	94 MW
10.	Derated Capacity	87.5 MW
11.	Expected Life of the Facility	30 years
12.	Operational Record	Not Applicable

Project Cost

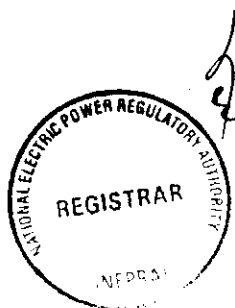
13.a	Equity	Rs. 1,134 million
13.b	Debt	Rs. 3,403 million
13.c	Total Project Cost	Rs. 4,537 million

Plant Characteristics

14.a	Generation Voltage	11000 V
14.b	Frequency	50 Hz
14.c	Power Factor	0.8
14.d	Automatic Generation Control	Not Applicable



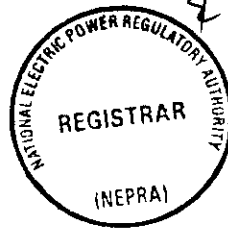
14.e	Ramping Rate	<p>Complex Load % per minute Range</p> <p>(i) 0 < 25 2% for Cold Start 2% for Warm Start 3% for Hot Start</p> <p>(ii) >25 < 50 2% for Cold Start 2% for Warm Start 3% for Hot Start</p> <p>(iii) >50 < 100 2% for Cold Start 3% for Warm Start 3% for Hot Start</p>
14.f	Alternative Fuel	Not Applicable
14.g	Auxiliary Consumption	7.2 MW
14.h	Time Required to Synchronize to Grid	<p>(i) Hot Start (< 8 hours shut down): Approx. 80 minutes</p> <p>(ii) Warm Start (< 45 hours shut down): Approx. 270 minutes</p> <p>(iii) Cold Start (> 45 hours shut down): Approx. 360 minutes</p>



SCHEDULE –II

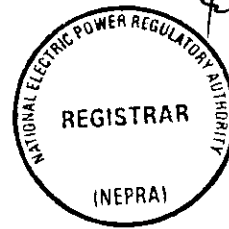
- The net capacity of the licensee's generation facilities

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SCHEDULE II

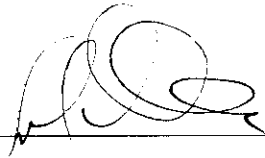
1.	GROSS INSTALLED CAPACITY (MW)	=	94 MW
2.	DERATED CAPACITY (MW)	=	87.5 MW
3.	AUXILIARY CONSUMPTION (MW)	=	7.2 MW
4.	NET CAPACITY OF THE PLANT (MW)	=	80.3 MW



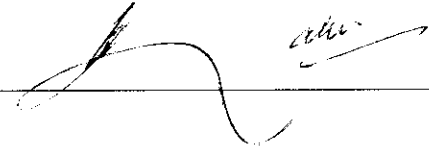
Tariff
(Article VI of the Licence)
DHA Cogen Limited

The Licensee, on his request, is allowed to sell power (80.3 MW) to Karachi Electric Supply Corporation (Distribution Licence Number 09/DL/2003), at a rate mutually agreed between the parties under the Power Purchase Agreement approved, by the Authority under Rule 6(1)(c) of the Licensing (Generation) Rules 2000 vide its Determination in case No.NEPRA/TRF-33/DCL-2004.

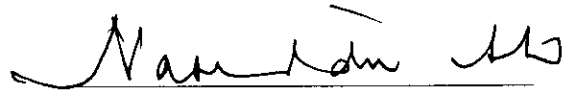
1. Mr. Fazlullah Qureshi, Member



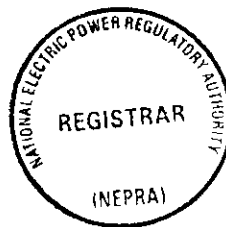
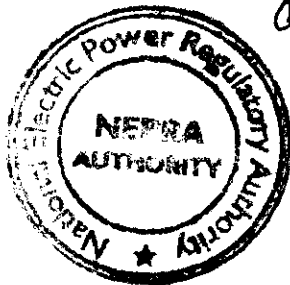
2. Mr. Abdul Rahim Khan, Member



3. Mr. Nasiruddin Ahmed, Member

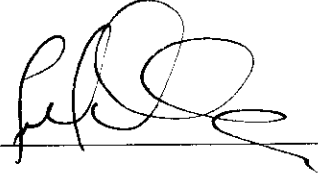


4. Lt Gen (R) Saeed uz Zafar, Chairman

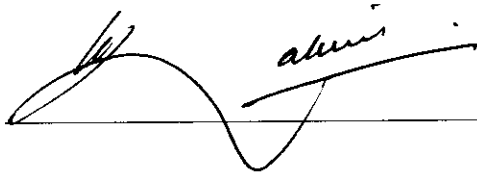



WITH THIS, the Authority hereby grants the Generation Licence to M/s DHA Cogen Limited in the terms and form as annexed to this determination. The grant of such a Licence would be subject to the provisions contained in the NEPRA Act and the relevant Rules framed thereunder.

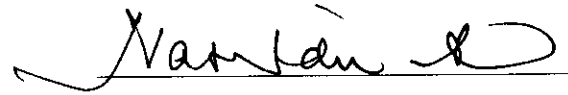
1. Mr. Fazlullah Qureshi, Member



2. Mr. Abdul Rahim Khan, Member



3. Mr. Nasiruddin Ahmed, Member



4. Lt Gen (R) Saeed uz Zafar, Chairman



BRIEF FOR THE AUTHORITY

DHA Cogen Limited

1.	Type & Plant Location	Combined Cycle Plant, Phase VIII, Defence, Karachi.
2.	Plant Capacity	94 MW
3.	Number/Size of units	(i) One Gas Turbine (67 MW) (ii) One Steam Turbine (27 MW)
4.	Total Installed Capacity	94 MW
5.	Total Derated Capacity	87.5 MW
6.	Auxilliary Consumption	7.2 MW including 0.74 MW power requirement of Desalination plant (auxiliary load)
7.	Total Net Capacity	80.3 MW
8.	Fuel Type	Natural Gas
9.	Fuel Supplier	SSGC
10.	Cooling Water Sources	Sea Water
11.	Generation Voltage	11 Kv
12.	Interconnection with the Grid	The connection between the Complex and KESC Network will be through double circuit 132 Kv transmission lines terminating at KESC grid station.
13.	Licence Period	30 years
14.	Emission Values	Provided
15.	Project Cost Information	Provided
16.	Required Commercial Operation Date	27 Months after Financial Close



**Term of the Licence
(Article 5 of the Licence)
DHA Cogen Limited**

The Rule 5 of the Licensing (Generation) Rules - 2000 stipulates that the term of Licence shall be commensurate with the maximum expected useful life of the units comprised in a generation facility demonstrated to the satisfaction of the Authority unless the applicant consents to a shorter period.

M/s DHA Cogen Limited has shown in its application No. nil dated 08-09-2004 to NEPRA for a Generation Licence, life of its facility as 30 years.

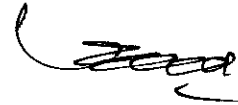
The Licensing Group considers that the Combined Cycle Plants normally have useful life of around 30 years, therefore, the Group recommends that the Licence be issued to DHA Cogen Limited, by the Authority for 30 years from the date of grant of Licence by the Authority.

AUTHORITY DECISION

The Authority agrees with the Licensing Group recommendations about the term of Licence. The Licence is granted for a term of 30 years.

Authority

Lt Gen (R) Saeed uz Zafar, Chairman



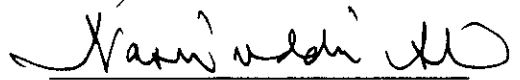
Mr. Abdul Rahim Khan, Member



Mr. Fazlullah Qureshi, Member



Mr. Nasiruddin Ahmed, Member

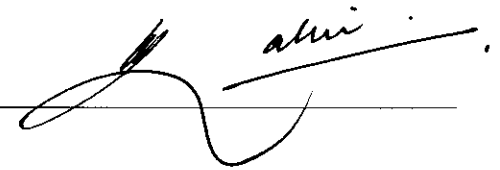


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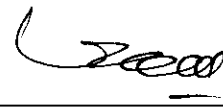
2. Mr. Abdul Rahim Khan, Member



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Authority

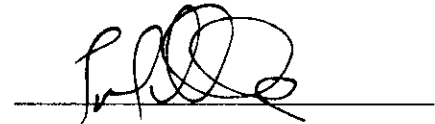
Lt Gen (R) Saeed uz Zafar, Chairman



Mr. Abdul Rahim Khan, Member



Mr. Fazlullah Qureshi, Member



Mr. Nasiruddin Ahmed, Member

