

# National Electric Power Regulatory Authority NEPRA

Registrar Office

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No. NEPRA/R/LAG-116/3054

May 27, 2009

Subject: **Generation Licence No. IGSP/21/2009**  
**Licence Application No. LAG-116**  
**SK Hydro (Pvt.) Limited (SKHPL)**

Enclosed please find a copy of Generation Licence No. IGSP/21/2009 issued by this office to SK Hydro (Pvt.) Limited (SKHPL) vide letter No. NEPRA/R/LAG-116/3051-53 dated May 27, 2009, along with copy of determination of the Authority in the matter of grant of Generation Licence to SKHPL, for information, please.

Enclosure: As above

  
(Engr. Arshad Mehmood)  
Registrar

**For information:**

1. Chairman
2. V. Chairman / M (S&P)
3. Member (T)
4. Member (L)
5. Member (CAD)

**Distribution:**

6. Director General (Technical)
7. Director (T)-II
8. Director (Coord)
9. Director (Finance)
10. Dy. Director (Licensing)-I
11. Dy. Director (Finance)
12. Deputy Director (IT)
13. Assistant Director (Library)

(Please place it on the NEPRA Website)

  
ADR



**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/RLAG-116/ 3051-53

May 27, 2009

Chief Executive/Director  
SK Hydro (Pvt.) Limited  
15 Peshawar Block,  
Fortress Stadium  
Lahore

**Subject: Generation Licence No. IGSP/21/2009**  
**Licence Application No. LAG-116**  
**SK Hydro (Pvt.) Limited (SKHPL)**

*References: Your letter No. SKH-NEPRA-09-010, dated July 11, 2008*

Enclosed please find herewith Generation Licence No. IGSP/21/2009 granted by the Authority to SK Hydro (Pvt.) Limited (SKHPL) pursuant to Section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

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

Enclosure: **Generation Licence**  
**(No. IGSP/21/2009)**



  
(Engr. Arshad Mehmood)

Copy to:

1. Chief Executive Officer, Peshawar Electric Supply Company Limited (PESCO), Sakhi Chashma, Shami Road, Peshawar
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. IGSPL/21/2009**

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:

**S K HYDRO (PRIVATE) LIMITED**

Incorporated under the Companies Ordinance, 1984  
Under Certificate of Incorporation


No. 00000015277/20050902, dated September 8, 2005

**For its Hydel Power Plant located at 1.5 Km Up stream of Paras Town,  
Kaghan Valley, District of Mansehra, North West Frontier Province**

(Installed Capacity: 840.00 MW Gross)

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

Given under my hand this 27<sup>th</sup> day of May, Two Thousand & Nine,  
and expires on 14<sup>th</sup> day of April, Two Thousand & Forty Six.

  
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 S. K. HYDRO (PRIVATE) LIMITED;
- (d) "Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000.

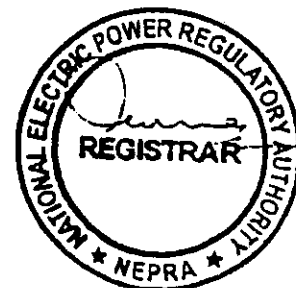
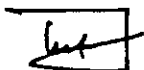
1.2 Words and expressions used but not defined herein bear the meaning given thereto in the Act or in the Rules.

**Article-2**  
**Application of Rules**

This Licence is issued subject to the provisions of the Act and 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 of Licence**

4.1 The Licence is granted for a term of thirty (30) years after the Commercial Operation Date.

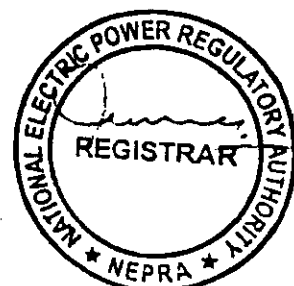
4.2 Unless revoked earlier, the Licensee may ninety days (90) days prior to the expiry of the term of the Licence, apply for renewal of the Licence under the Licensing (Application and Modification Procedures) Regulation, 1999

**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 only such tariff which has been 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 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**

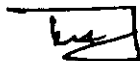
For the purpose of sub-rule (1) of Rule 19 of the Rules, copies of records and data shall be retained in standard and electronic form and all such records and data shall, subject to just claims of confidentiality, be accessible by authorized officers of the Authority.

**Article-9**  
**Compliance with Performance Standards**

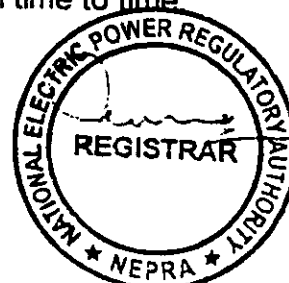
The Licensee shall conform to the relevant NEPRA rules on Performance Standards as may be prescribed by the Authority from time to time.

**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**  
**Power off take Point and Voltage**

The Licensee shall deliver power to the power purchaser or procurer (on behalf of purchaser(s)) at 132KV/220KV or any other voltage level (as the case may be) at the door step of its generation facility. The Up-gradation (step up) of generation voltage up to 132 KV/220 KV or any other voltage will be the responsibility of the Licensee.

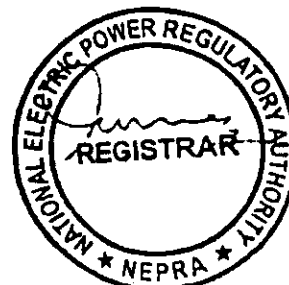
**Article-12**  
**Provision of Information**

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

12.2 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.

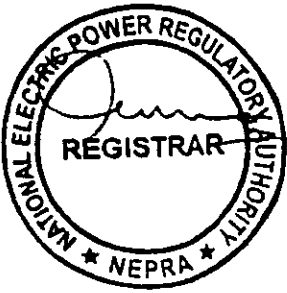
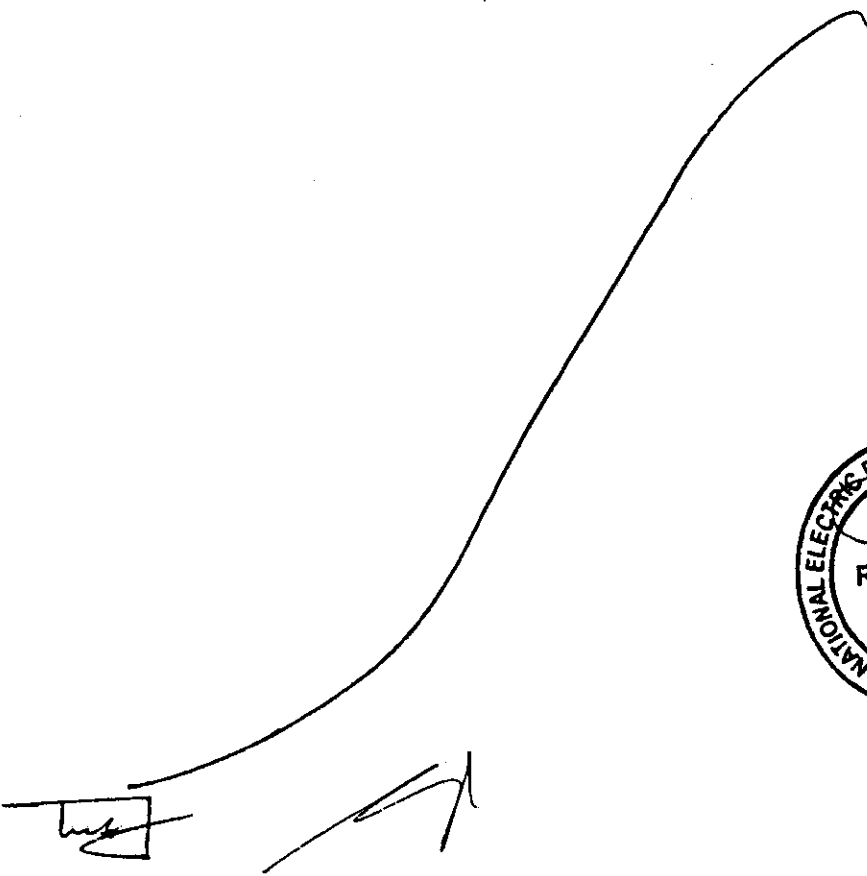
**Article-13**  
**Emissions Trading /Carbon Credits**

The Licensee shall process and obtain emissions/carbon credits expeditiously and credit the proceeds to the Power Purchaser/Procurer on behalf of purchaser(s), as per policy issued by the Government on the subject and agreed terms between the Licensee and the Power Purchaser.



## 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.



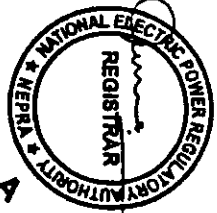
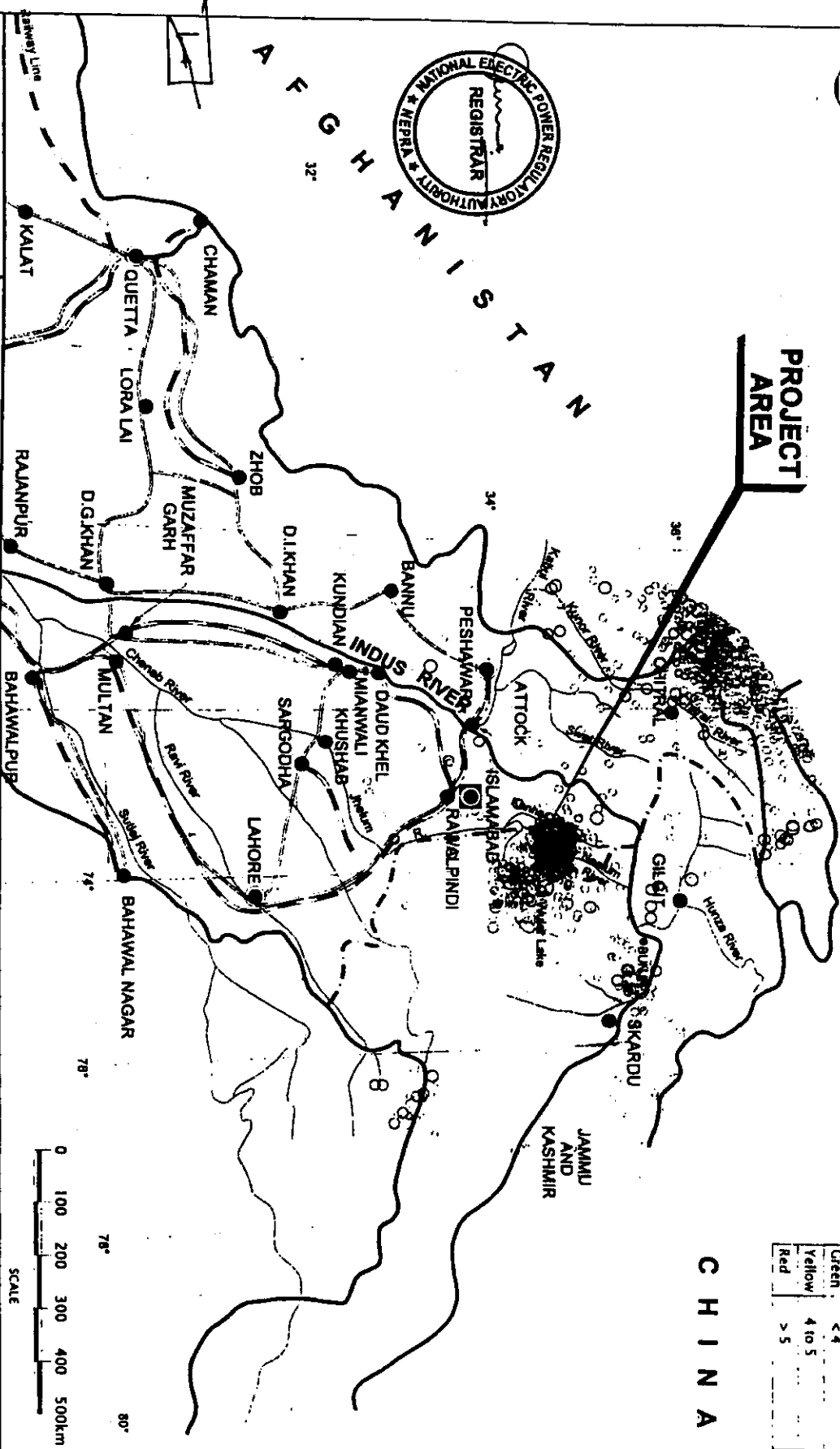




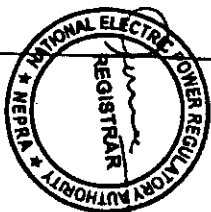
**PROJECT AREA**

**Key to symbols:-**

Colour	Earthquake Magnitude
Green	< 4
Yellow	4 to 5
Red	> 5

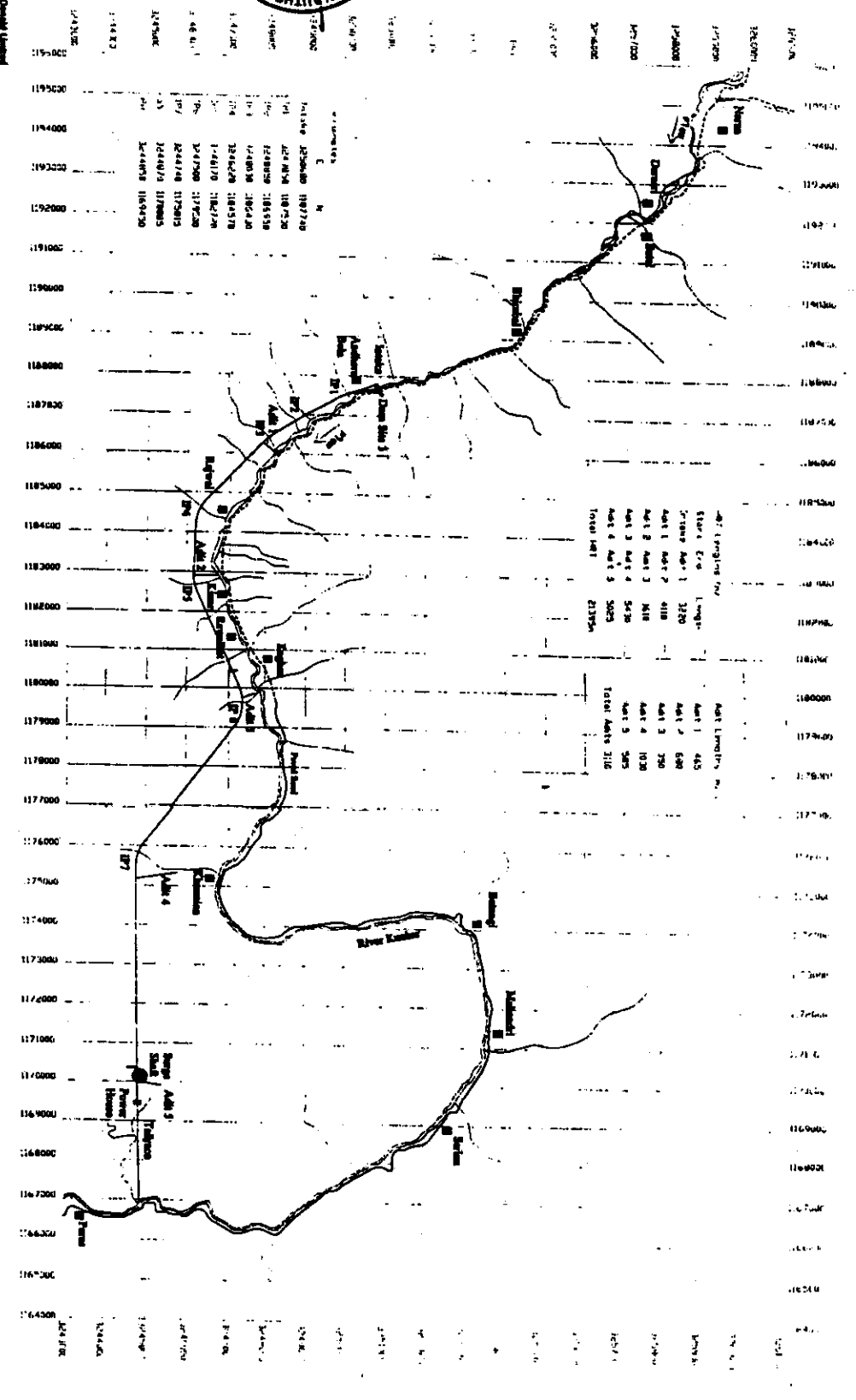


<p><b>REV. DATE DRAWN DESCRIPTION CHECKED APPROVED TMS</b></p> <p>P1 P2</p>		<p><b>CLIENT</b> S.K. Hydel (Pvt.) Sindhmanchar, Federal Govt. Lahore, Punjab</p>		<p><b>DESIGN</b> A. RIND M. FAHIM</p> <p><b>CHECKED</b> B. SHAIKH E. DELGADO</p> <p><b>APPROVED</b> J. B. SHOHAN M. FAHIM</p>	
<p><b>PROJECT AREA</b></p>		<p><b>CLIENT</b> S.K. Hydel (Pvt.) Sindhmanchar, Federal Govt. Lahore, Punjab</p>		<p><b>DESIGN</b> A. RIND M. FAHIM</p> <p><b>CHECKED</b> B. SHAIKH E. DELGADO</p> <p><b>APPROVED</b> J. B. SHOHAN M. FAHIM</p>	
<p><b>SCALE</b> 1:50,000</p>		<p><b>SCALE</b> 1:50,000</p>		<p><b>SCALE</b> 1:50,000</p>	
<p><b>SCALE</b> 0 100 200 300 400 500km</p>		<p><b>SCALE</b> 0 100 200 300 400 500km</p>		<p><b>SCALE</b> 0 100 200 300 400 500km</p>	
<p><b>SCALE</b> 0 100 200 300 400 500km</p>		<p><b>SCALE</b> 0 100 200 300 400 500km</p>		<p><b>SCALE</b> 0 100 200 300 400 500km</p>	

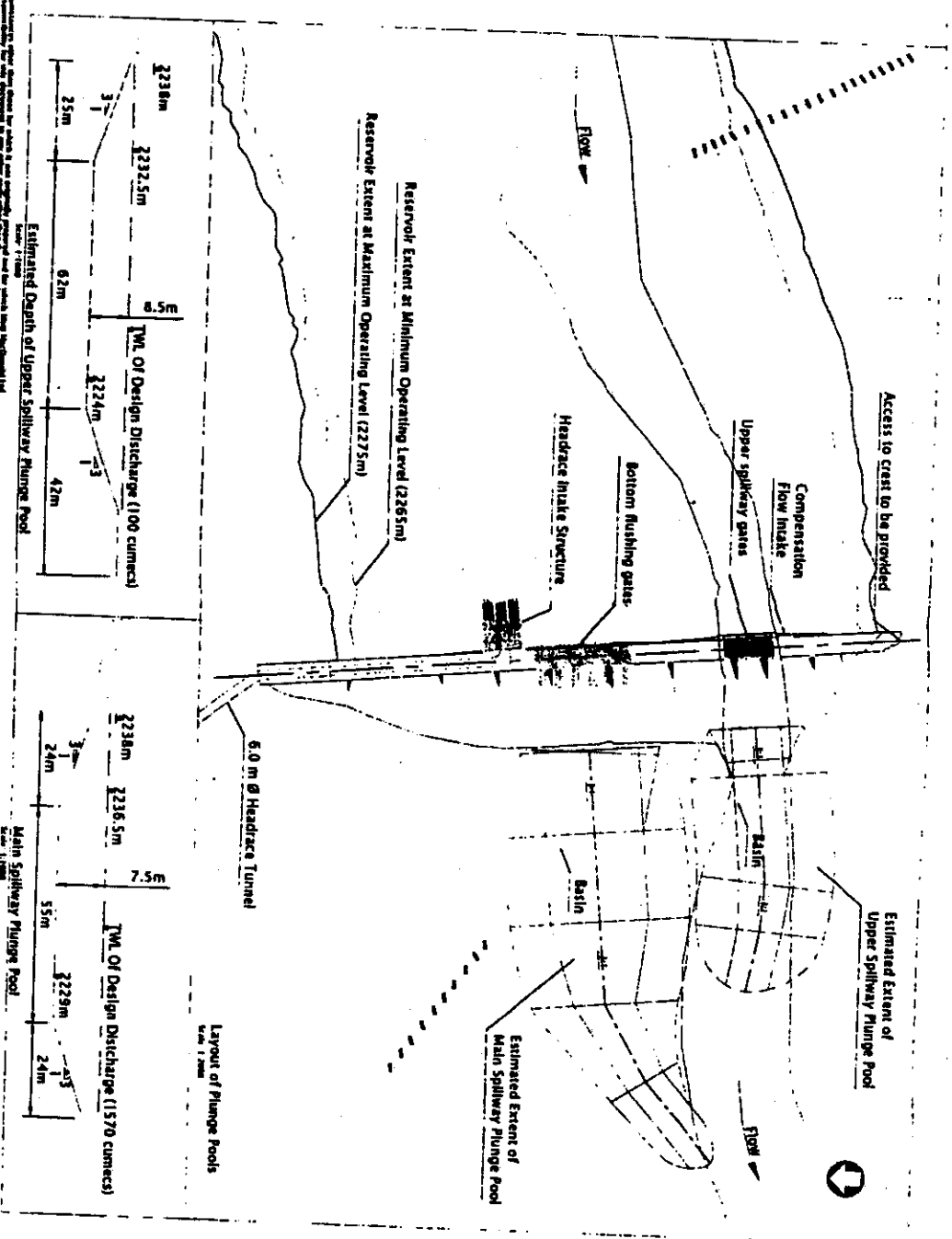


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<p><b>Sauri MacDonald</b> Tel: +91 11 273 34000 Fax: +91 11 273 34004 www.sma.com</p>		<p><b>Client:</b> S.K. Hydro (PVT.) Ltd. 15-Pathar Bazaar, Fortness Building Lahore, Cantt.</p>		<p><b>Drawn:</b> [Blank] <b>Checked:</b> [Blank] <b>Approved:</b> [Blank]</p>		<p><b>Title:</b> Feasibility Study Of 640MW Sauri Kharai Hydropower Project Project Layout</p> <p>DWG NO: 222877/SK-PP/0004</p>	
REV.	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE	DESCRIPTION	DATE
P1		Issue					
P2		Revised					
P3		Final					
<p><b>Drawn:</b> [Blank] <b>Checked:</b> [Blank] <b>Approved:</b> [Blank]</p>		<p><b>Scale:</b> 1:10000</p>		<p><b>Rev:</b> P1</p>		<p><b>Status:</b> [Blank]</p>	



**mm Macdonald**  
 Tel: 4400 1223 463100  
 Fax: 4400 1223 461007  
 Web: www.mmimc.com

Owner: Hyatt  
 System Name: Chashira, CA 705  
 Under Design

Client: S. K. Myra PVT. Ltd.  
 15-Ashrafieh Street/Ferrous Station  
 Lahore Cant.

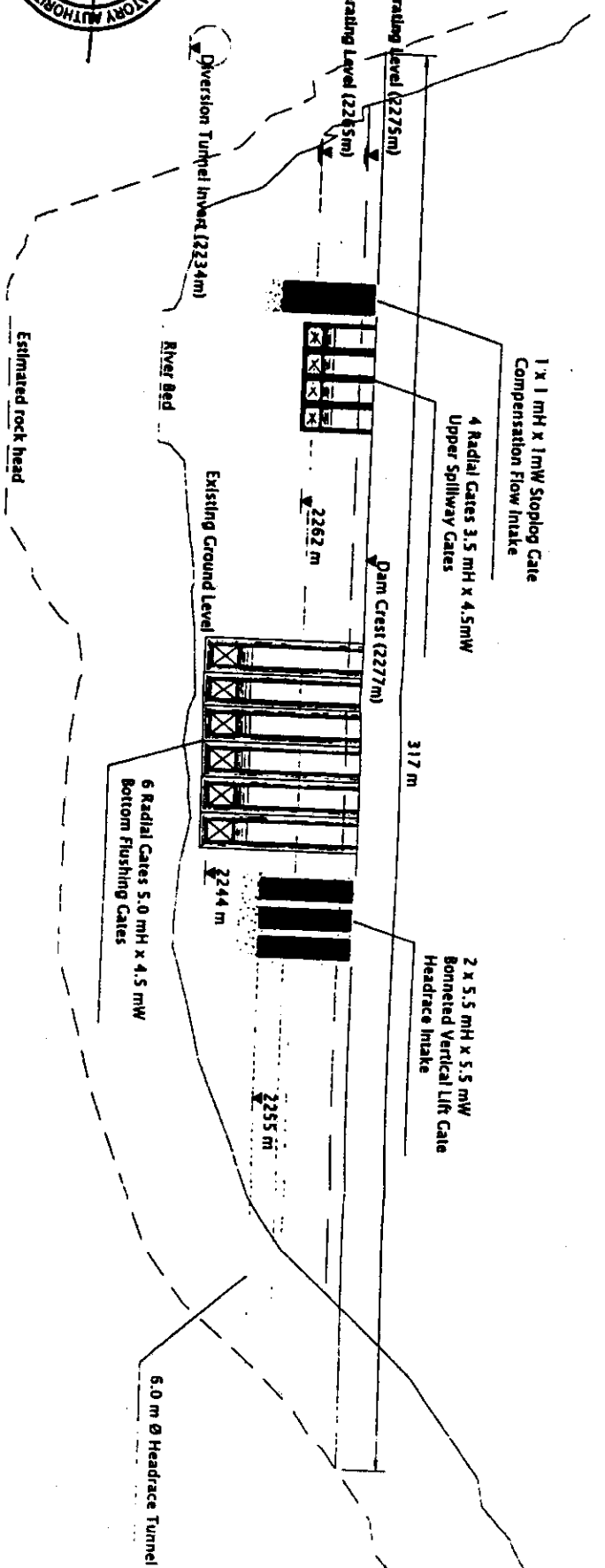
Rev	Date	Drawn	Description
P1	17/12/07	CK	PRELIMINARY ISSUE

Checked	App'd	Title
KJC	ED	Feasibility Study Of 800KW Sali Tinner Hydropower Project Headworks - Option D/S3 Layout

Drawing No. **222977/SKHPP/1002**

Drawn	Checked	Approved	Scale
CJE	KJC	ED	1:2000

Rev: P1 Status: PRE



2165

Surface	Chainage	Elevation
222	0	222
223	10	223
224	20	224
225	30	225
226	40	226
227	50	227
228	60	228
229	70	229
230	80	230
231	90	231
232	100	232
233	110	233
234	120	234
235	130	235
236	140	236
237	150	237
238	160	238
239	170	239
240	180	240
241	190	241
242	200	242
243	210	243
244	220	244
245	230	245
246	240	246
247	250	247
248	260	248
249	270	249
250	280	250
251	290	251
252	300	252
253	310	253
254	320	254
255	330	255
256	340	256
257	350	257
258	360	258
259	370	259
260	380	260
261	390	261
262	400	262
263	410	263
264	420	264
265	430	265
266	440	266
267	450	267
268	460	268
269	470	269
270	480	270
271	490	271
272	500	272

Upstream Elevation  
Horiz. 1:1000 Vert. 1:1000

**MM**  
MacDonald

Director House  
Station Road  
Cambridge, CB1 2BS  
United Kingdom

Tel: +44(0) 1223 463500  
Fax: +44(0) 1223 461007  
Web: www.mmimac.com

Client  
S.K. Hydro (PVT) Ltd.  
15 Freshwater Block, Forrester Stadium  
Lahore, Cant.

Rev	Date	Drawn	Description
P1	17/12/07	CE	PRELIMINARY ISSUE

Chk'd	App'd
KC	ED

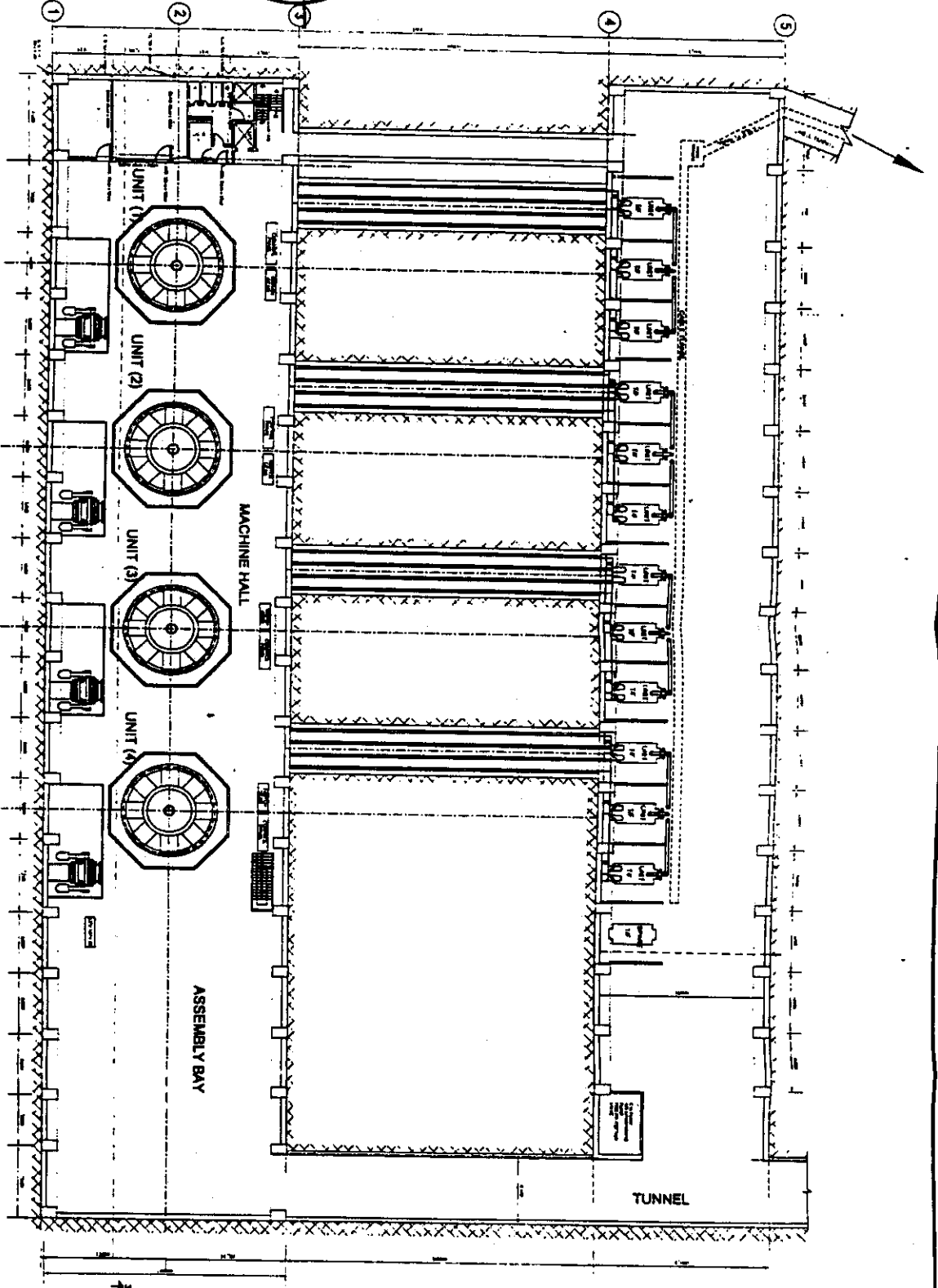
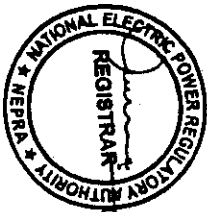
Feasibility Study Of 640MW  
Sulei Khari Hydro Power Project  
Headworks - Option D53  
Section through dam axis

Drawing No. 222977/SKHPP/1003

Rev	Status
P1	PRE

Scale at A3: 1:1000

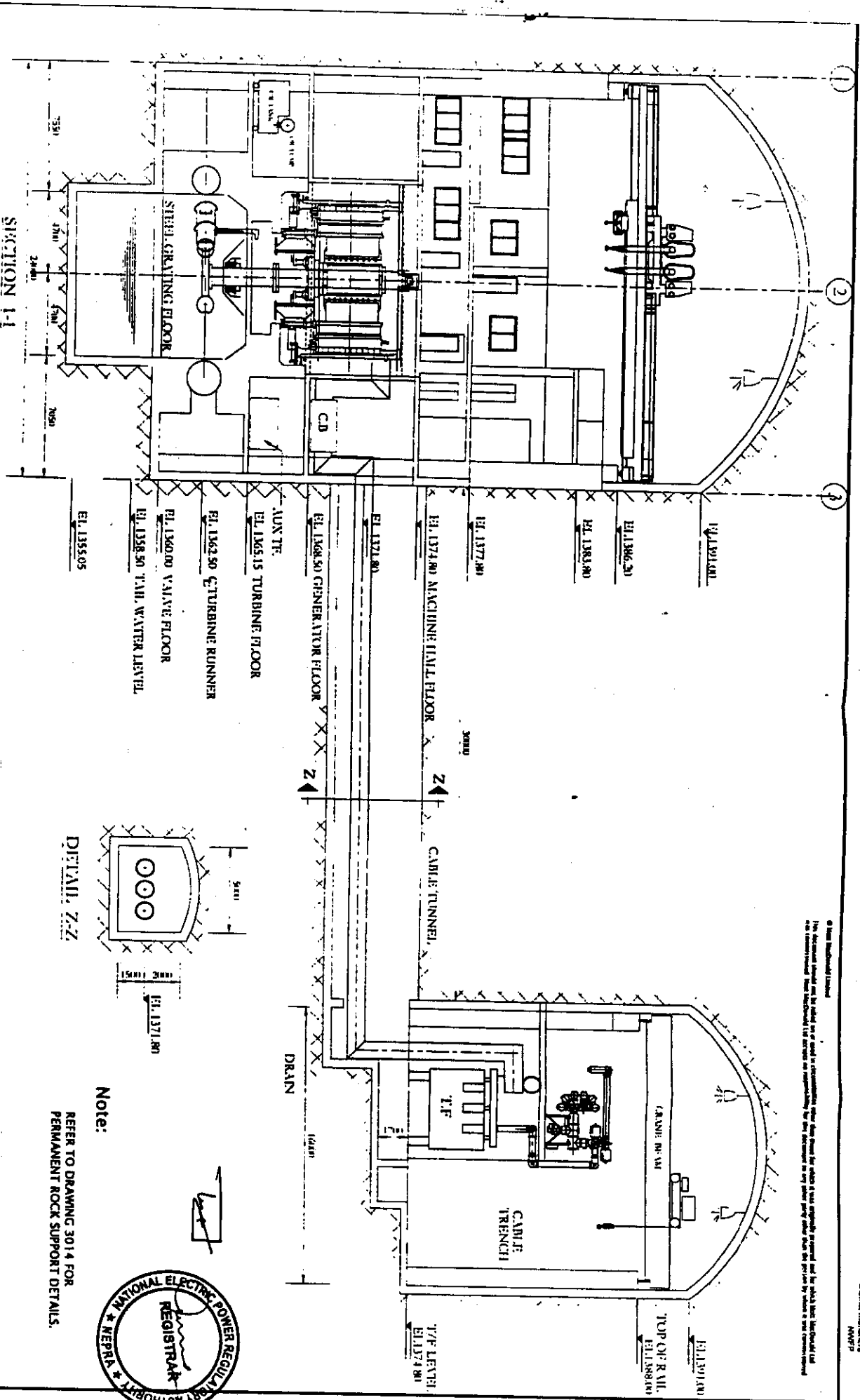
© S.K. Hydro (Private) Limited



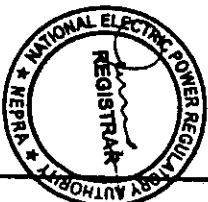
OPERATING FLOOR PLAN

		M.M. MacDonald M MacDonald Victory House Trade Park Brighton BN1 4PT, Brighton TEL: +44 (0) 1273-86000 FAX: +44 (0) 1273-86044 www.mmac.com		Client <b>S.K. Hydro (PVT) Ltd.</b> 15-Parkway Block, Forties Stadium Luton, Cambs.		REV. DATE DRAWN BY P1 26.07.07 Mr. Anish Ch. P2 26.07.07 Mr. Hassan Adnan P3 24.08.07 Mr. Hassan Adnan P4 26.08.07 Mr. Hassan Adnan P5 27.08.07 Mr. Hassan Adnan		DESCRIPTION Franchise drawings		CHECKED BY Mr. Hassan Adnan Mr. Hassan Adnan Mr. Hassan Adnan Mr. Hassan Adnan Mr. Hassan Adnan		APPROVED BY Mr. Hassan Adnan Mr. Hassan Adnan Mr. Hassan Adnan Mr. Hassan Adnan Mr. Hassan Adnan		TITLE <b>Feasibility Study of 840MW          Suki Khand Hydro-power Project          Operating Floor And Assembly Bay</b>		DRAWN BY Mr. Anish Ch.	
DWD NO. ZZ2977/8/RQ/PP/2004		DESIGN CHECKED BY Mr. Hassan Adnan Mr. Hassan Adnan		APPROVED BY E. Dajani		SCALE 1:400		STATUS PREL.		REV. P4		DATE 27.08.07		DRAWN BY Mr. Hassan Adnan			

This drawing is the property of the Engineer. It shall not be used for any other purpose without the written consent of the Engineer. The Engineer shall not be responsible for any damage or loss of any kind caused by the use of this drawing for any purpose other than that intended.



Note:  
REFER TO DRAWING 3014 FOR  
PERMANENT ROCK SUPPORT DETAILS.



SECTION 1-1

**M** Molt  
MacDonald

Victory House  
Trafalgar Place  
Brighton  
BN1 1 QY, England  
TEL: +44 (0)1273-866000  
FAX: +44 (0)1273-862344  
www.moltd.com

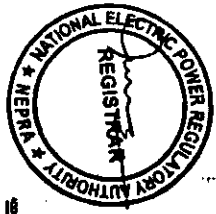
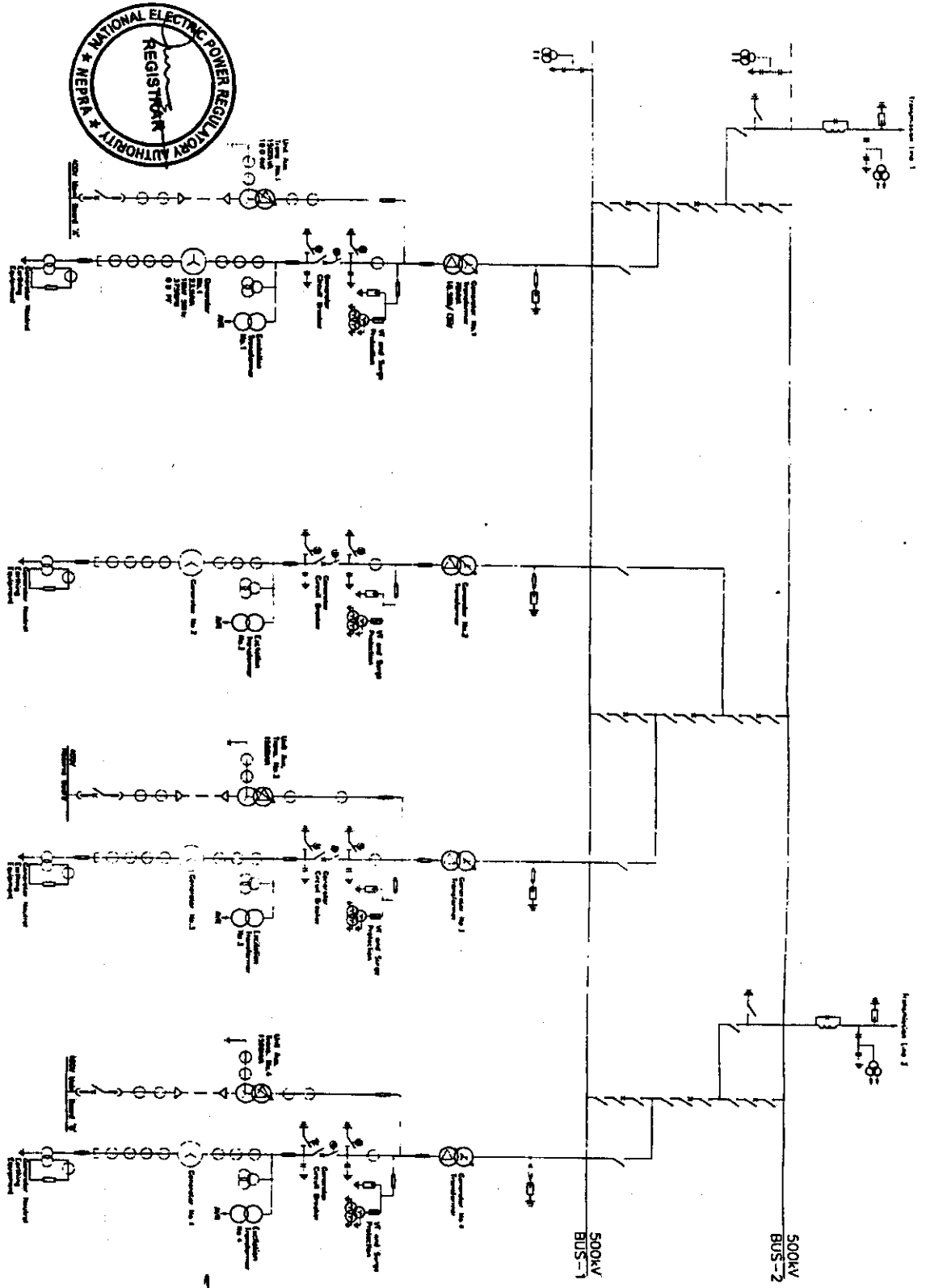
CLIENT  
S.K. Hydro (Pvt.)  
18-Fishwick Road, Ferozeshah  
Lahore, Cantt.

REV.	DATE	DRAWN	DESCRIPTION	CHECKED	APPROVED
P1	20.07.07	John Ch.		Jaff Kar	
P2	06.08.07	John Ch.		Jaff Kar	
P3	16.08.07	John Ch.		Jaff Kar	
P4	20.08.07	MOHAM		Jaff Kar	
P5	27.08.07	MOHAM	Final design	Jaff Kar	
P6	04.12.07	MOHAM	Final design	Jaff Kar	
P7	16.12.07	MOHAM	Final design	Jaff Kar	

THE  
Feasibility Study of 840MW  
Suki Kharit Hydropower Project  
Power House  
Section (1-1)

DWG NO. 222877/SK04PP/3006

DRAWN	Mr. AMIN CH.
DESIGN	Mr. JAWAHIR HAZRATI
CHECKED	Jaff Kar
APPROVED	E. Dargah
SCALE	1:200
REV.	
P. 8	STATUS
P. 8	P. 8



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Victory House  
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Blyth  
BN1 4PT, England

Client  
S.K. Hydro (PVT) Ltd.  
15, Pashawar Block, Fortesa Stadium  
Lahore, Canal

REV.	DATE	DRAWN	DESCRIPTION	CHECKED	APPROVED
P1	10/07/07	JAVED			
P2	26/07/07	Muhammad Javed			
P3					
P4					

Title  
Feasibility study of 840MW  
Sud Kani Hydro power project  
Single Line Diagram

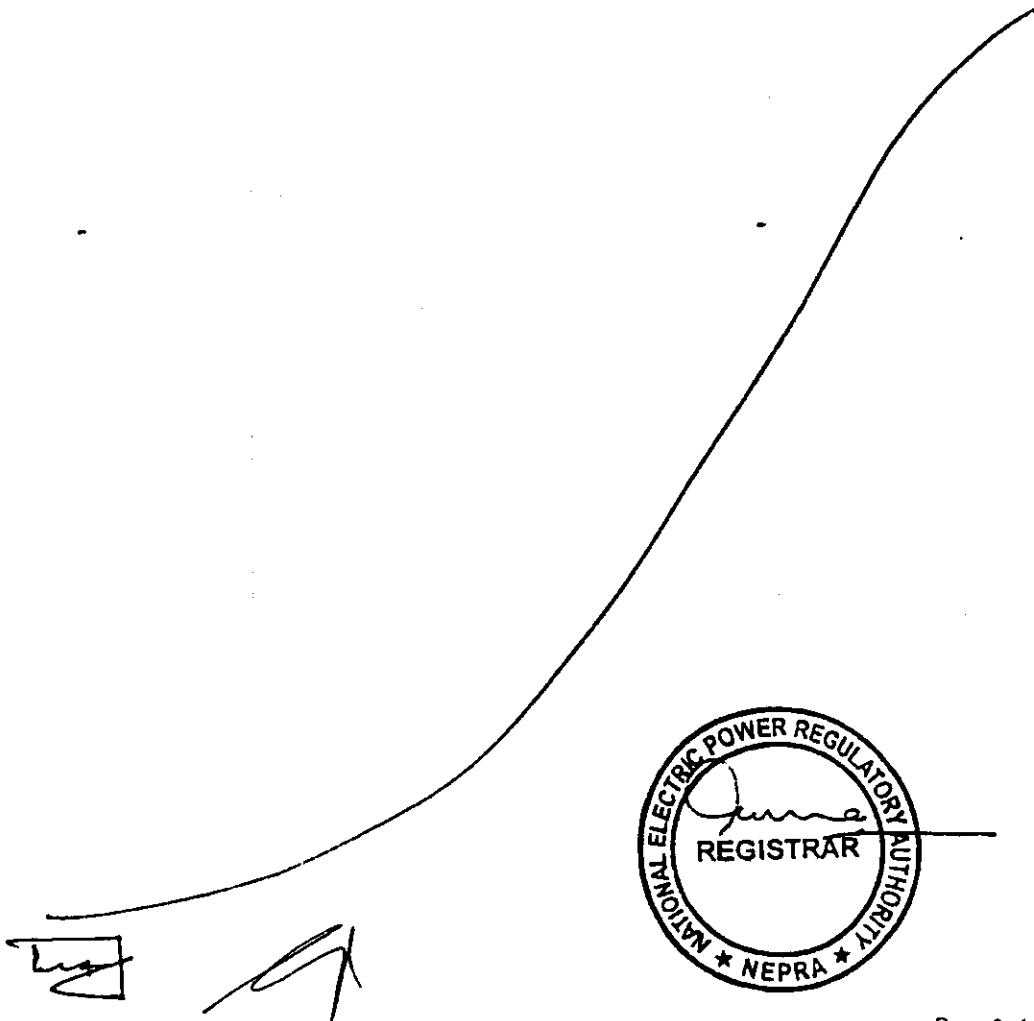
DWG NO. 222977/SKHP/3015

DRAWN	JAVED
DESIGN	H. GANH
CHECKED	
APPROVED	1st time
SCALE	N.T.S
REV. P.2	STATUS
	PNE

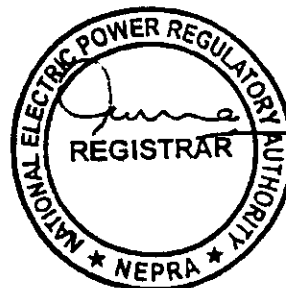
## INTERCONNECTION SCHEME FOR THE POWER DISPERSAL OF THE PLANT

The Power generated by the S.K. Hydro (Private) Limited (SKHPL) from its Hydel Generation Facility shall be dispersed to the National Grid through 132 KV/220/500 kV or any other voltage level.

The final details Interconnection and Transmission Arrangement(s), for the dispersal of power, as proposed and recommended by NTDC and agreed by SKHPL shall be communicated to NEPRA in due course of time.



*[Handwritten signature]*





## Plant Details\*

### 1. General Information

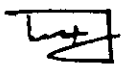

(i).	Name of Applicant	S. K. Hydro (Private) Limited
(ii).	Registered/Business Office	15, Peshawar Block, Fortress Stadium, Lahore, Punjab, Pakistan
(iii).	Plant Location	1.5 Km Up stream of Paras Town, Kaghan Valley, District of Mansehra, NWFP
(iv).	Type of Generation Facility	Hydel Power Plant

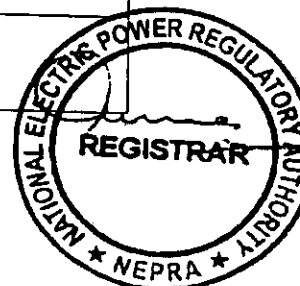
### 2. Plant Configuration

(i).	Plant Size Installed Capacity (Gross)	840.00 MW	
(ii).	Plant type	Run of River	
(iii).	Water Source	Kunhar River	
(iv).	Type of Technology	Pelton Wheel Turbines	
(v).	Number of Units & Size(MW)	4 x 210 MW	
(v).	Turbine Make & Model <sup>†</sup>	VA Tech Hydro GmbH, Austria or Equivalent	
(vi).	De-rated Capacity at Mean Site Conditions	840.00 MW	
(vii).	Auxiliary Consumption	8.40 MW	
(viii).	Expected Commissioning and Commercial Operation Date (COD)	Commissioning	COD
		December 15, 2015	April 15, 2016
(xix).	Expected Life of the Facility from COD	More than 30 years	

\* As provided by the Applicant

† Hydro turbines of such rating are designed and manufactured to meet the specific requirements of each site and are not available off the Shelf as per standard models.

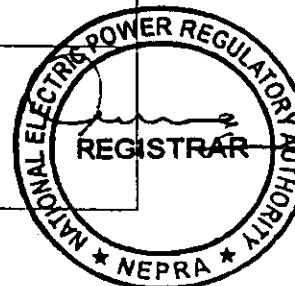


### 3. Plant Head & Tunnel Details

(i).	Head	Maximum Net Head	824.2 Meter
		Minimum Net Head	814.2 Meter
		Rated Head	823.4 Meter
(ii).	Tunnel (Head Race)	Length	Diameter
		21.4 Km	6.0 Meter
(iii).	Tunnel (Tail Race)	Length	Dimensions
		2.47 Km	5.4x6.2 Meter Horse shoe shape
(iv).	Diversion & Intake structure (DIS) type	Concrete Gravity	
(v).	DIS Crest Elevation	2 277 masl	
(vi).	DIS Crest Length	317 Meter	
(vii).	Reservoir Length	3,000 Meter	
(viii).	Reservoir Total Volume (approx)	9.00 Million Meter <sup>3</sup>	
(ix).	Active Storage (Within operating range)	2.7 Million Meter <sup>3</sup>	

### 4. Plant Characteristics

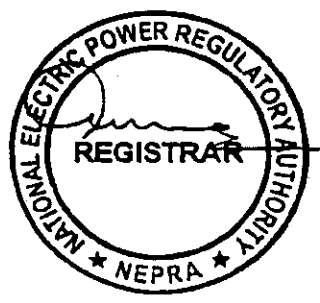
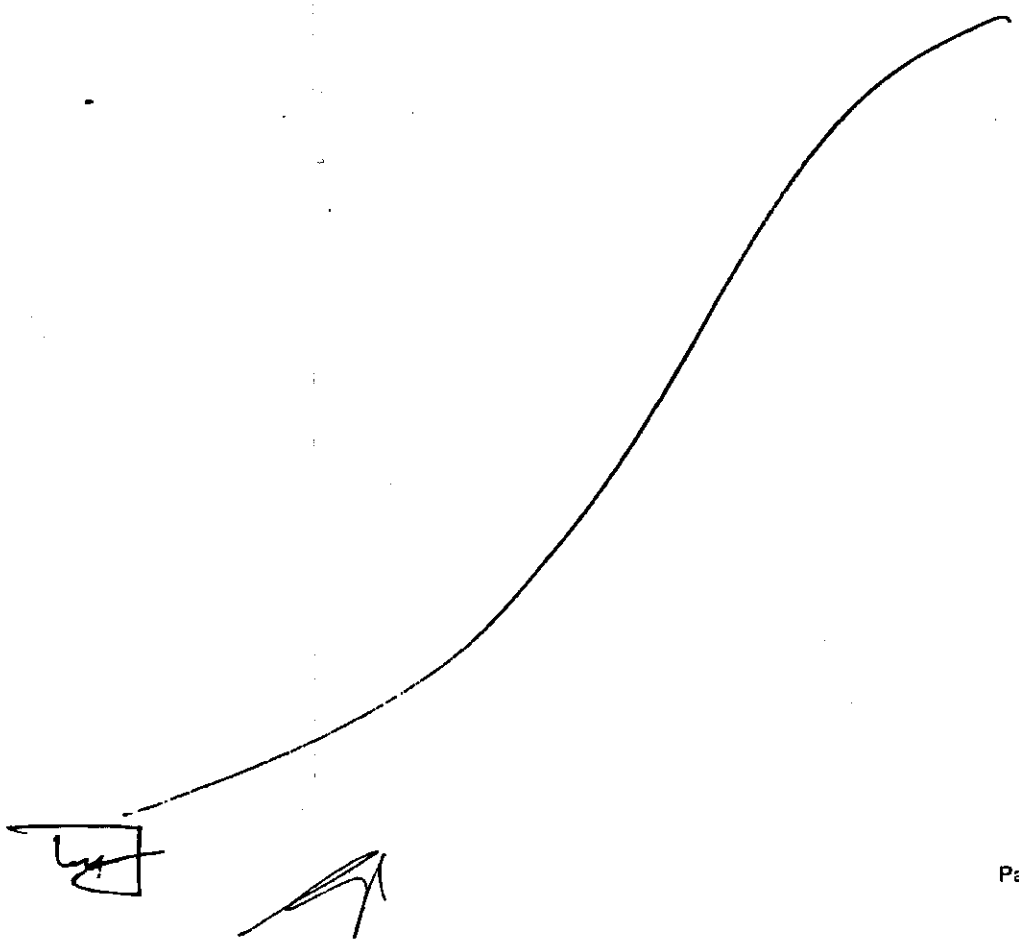
(i).	Generation Voltage	18 kV
(ii).	Frequency	50 Hz
(iii).	Power Factor	0.9 lagging to 0.90 leading
(iv).	Automatic Generation Control	Yes
(v).	Ramping Rate	To be provided later
(vi).	Time required to Synchronize to Grid and loading the Complex to full load.	-do-



*[Handwritten signatures]*

**SCHEDULE-II**

The Installed, De-Rated, Auxiliary and Net Capacity of the Licensee's  
Generation Facilities



## SCHEDULE-II\*

1.	Plant Size Installed Capacity (Gross)	840.00 MW
2.	De-rated Capacity at Mean Site Conditions	840.00 MW
3.	Auxiliary Consumption	8.40 MW
4.	Net Capacity of the Plant at Mean Site Conditions	831.60 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.



\* As provided by the applicant

