



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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Tel : 9207200,9205225 Fax : 9210215
E-mail: office@nepra.org.pk

No. NEPRA/R/LAG-28/6457-8

21-08-2006

Project Director
Sarhad Hydel Development Organization (SHYDO)
Malakand-III Hydro Power Project
Dargai Phatak
Dargai Malakand Agency

Subject: **Grant of Generation Licence GL(Hydel)/07/2006**
Licence Application No. LAG-28
Sarhad Hydel Development Organization (SHYDO)

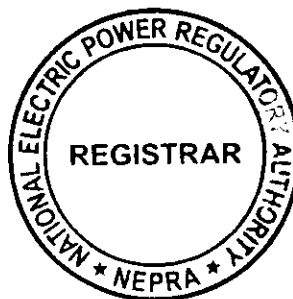
Please refer to your Application No. 3865/SHYDO/PD-Mkd, dated 01.09.2004


for a Generation Licence.

2. Enclosed here is Generation Licence No. GL(Hydel)/07/2006 granted by the Authority to Sarhad Hydel Development Organization (SHYDO). The Licence is granted 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.




21.08.06
(Mahjoob Ahmad Mirza)

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

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

GENERATION LICENCE

No. GL (Hydel)/07/2006

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:

Sarhad Hydel Development Organization (SHYDO)
Established under the SHYDO Act 1993 of Government of NWFP

For its Plant at Malakand-III

(Installed Capacity: 83.7 MW ISO Gross)


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

Given under my hand this 21st day of August, Two Thousand & Six, and expires on 30th day of January, Two Thousand & Thirty Two.



Registrar





Article 1

Definitions

In this Licence:

“Act” means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (XL of 1997);

“Authority” means the National Electric Power Regulatory Authority constituted under section 3 of the Act;

“Licensee” means Sarhad Hydel Development Organization (SHYDO)

“Rules” means the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000.

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

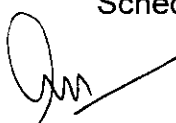

This Licence is issued subject to the provisions of the Rules, as amended from time to time.

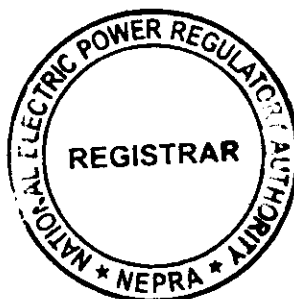
Article 3

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.

→   2 ✓



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 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.

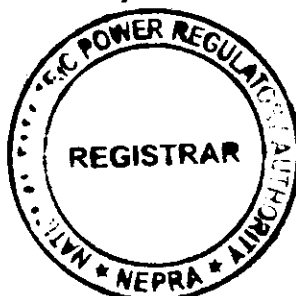
Article 6 Tariff

The licensee shall charge 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

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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.

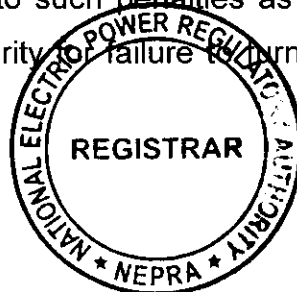
Article 10 Compliance with Environmental Standards

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

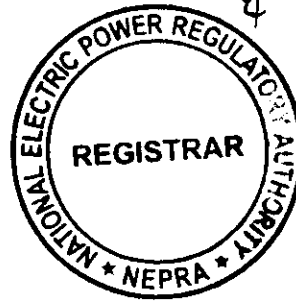
Article 11 Provision of Information

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



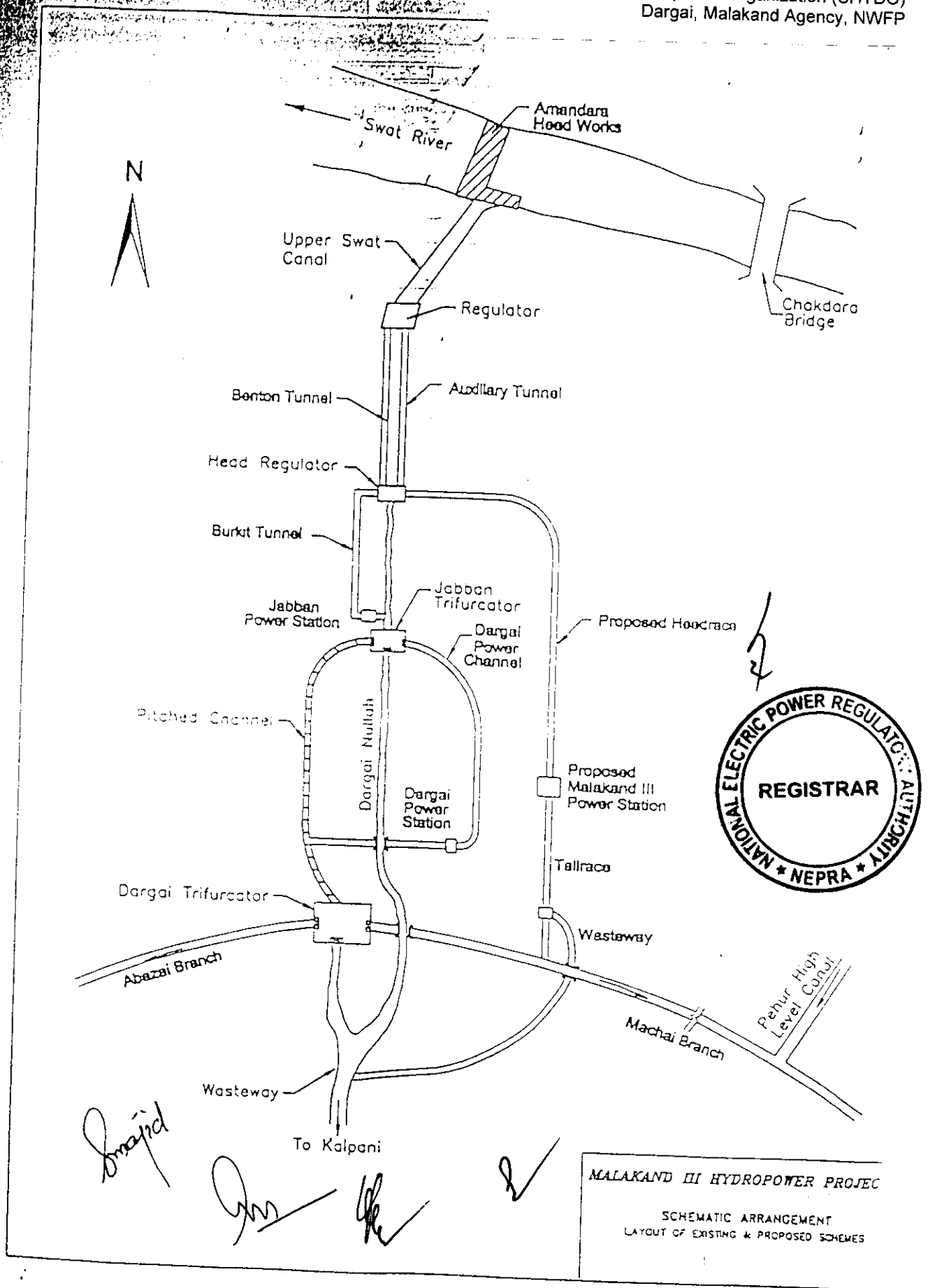
as may be required from time to time by the Authority and which is or ought to be or have been in the control or possession of the licensee.

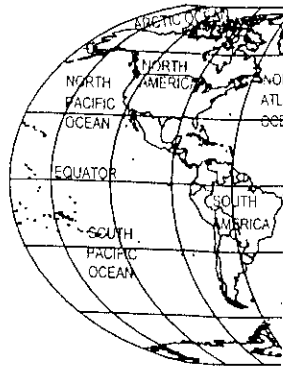


SCHEDULE-I

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.



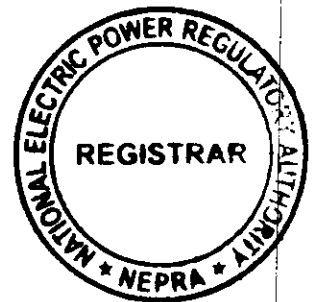




PRC

LEGEND

MAIN CANAL/DISTY/MINOR
DRAINS
RIVER
CITY/TOWN
INTERNATIONAL BOUNDARY
PROVINCIAL BOUNDARY
METALLED ROADS
EXISTING DAM
PROPOSED DAM
HEAD WORKS
PROJECT AREA



AFGHANISTAN

KABUL RIVER

KHYBER AGENCY

KURRAM AGENCY

ORAK ZAI AC

KOHAT

NAWAB

HANGU

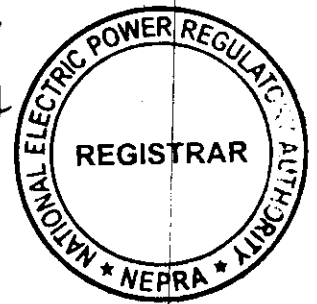
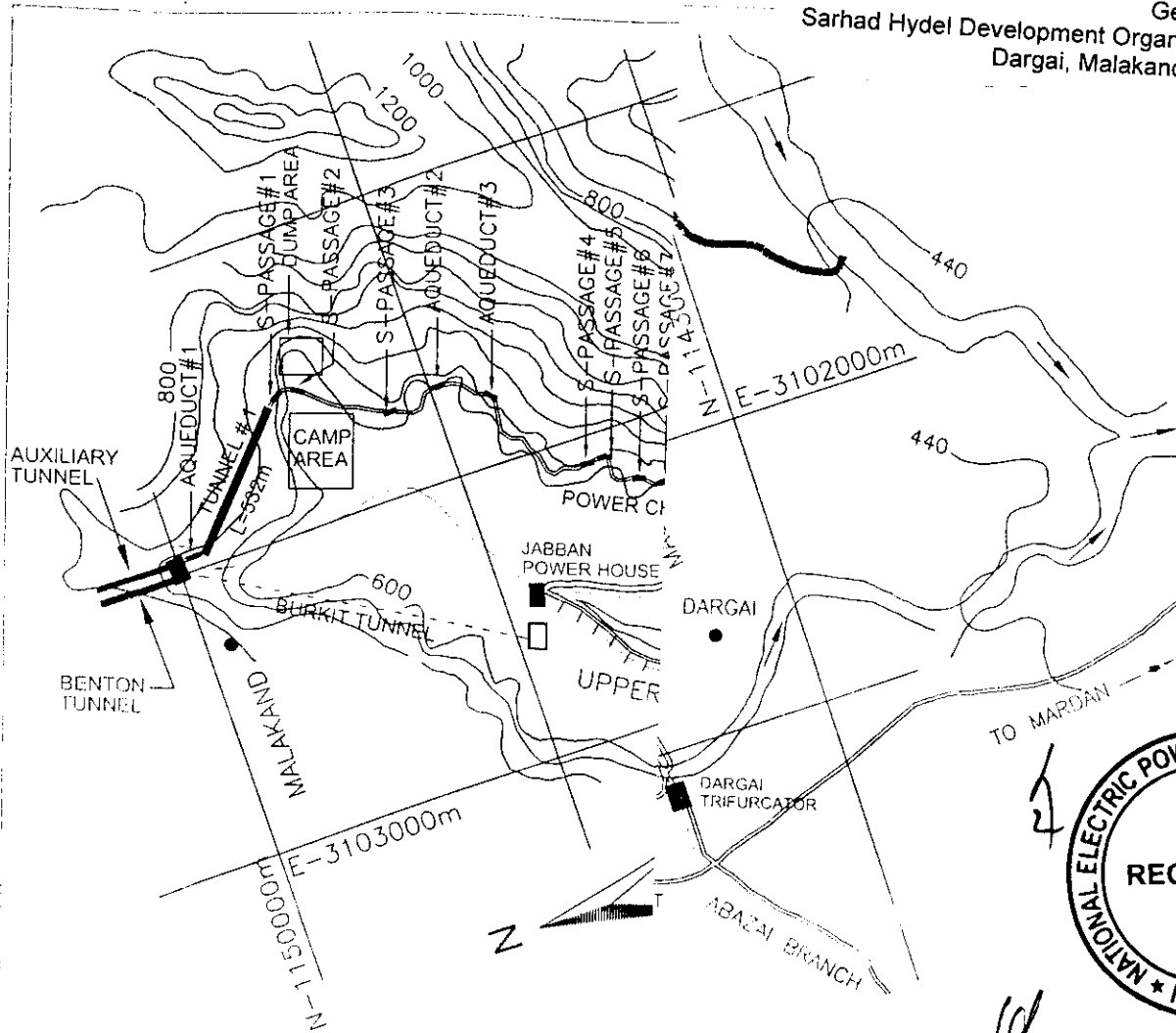
KURRAM RIVER

[Signature]

21.7.2006

Project Director
Malakand III Hydropower Project
Sarhad Hydel Development
Organization (SHYDO)
Government of NWFP

REV	DATE	DESCRIPTION	DRWN	CHKD	APPR
SARHAD HYDEL DEVELOPMENT ORGANIZATION					
MALAKAND III HYDROPOWER PROJECT					
PROJECT AREA					
LOCATION MAP					
DESIGNED		CHECKED		DATE	
HAROON		ABBAS ALI		NOV.	
DRAWN		APPROVED		2002	
HAROON/ALI		H. D. BANCASH			
CONTRACT NO.		DRAWING NO.			
CIVIL-01					
SCALE					
1: 750,000					
MALAKAND III HYDROPOWER CONSULTANTS					
				A-002-01	

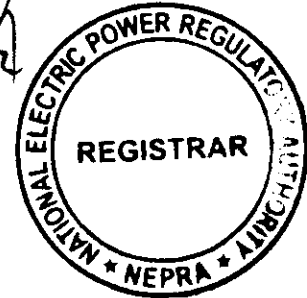
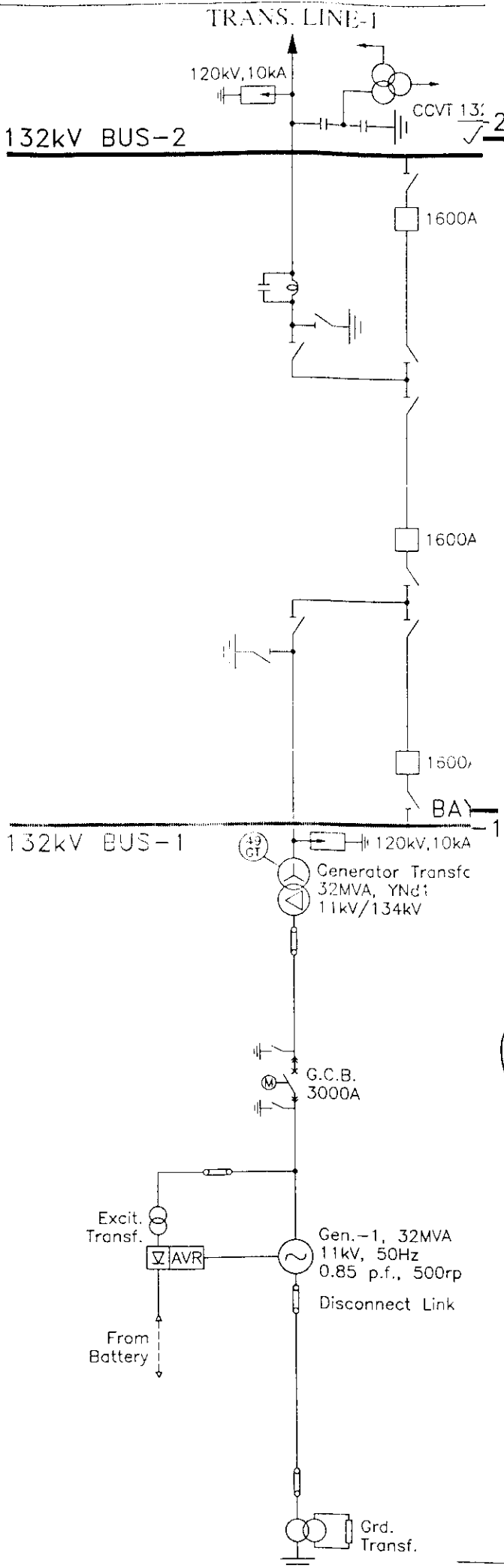


1. Name of Project	Malakand III
2. Location	Dargai (N.W.F)
3. Source of Water	Upper
4. Generation Capacity	81.69
5. Energy	553.16
6. Discharge	56.6 c
7. Fall (Drop)	183.5
8. Head Race	
a) Open Channel	2.62 k
b) Tunnels 3 Nos.	2.97 k

(Signature)
(Signature)
 21.7.2006
Project Director
 Malakand III Hydropower Project
 Sarhad Hydel Development Organization (SHYDO)
 Government of NWFP

REV	DATE	DESCRIPTION	DRWN	CHKD	APPO
SARHAD HYDEL DEVELOPMENT ORGANIZATION					
MALAKAND III HYDROPOWER PROJECT					
PROJECT LAYOUT					
LAYOUT PLAN OF MALAKAND-III HYDROPOWER PROJECT					
Sheet 1 of 1					
DESIGNED HARON		CHECKED HARON		DATE Nov, 2002	
DRAWN ANILA/ALI		APPROVED H.D. BANGASH			
CONTRACT NO. CIVIL-01		DRAWING NO.			
SCALE : 1:25					


A-002-02



Project Director
Malakand III Hydropower Project
Sarhad Hydel Development
Organization (SHYDO)
Government of NWFP

NOTES:

1. ALL BAYS ARE SIMILAR AS REGARDS METERING AND PROTECTION.
2. ALL GENERATORS AND LINE FEEDERS SIMILAR IN DETAILS TO GENERATORS 1 & 2

REV	DATE	DESCRIPTION				DRWN	CHKD	APPO	
SARHAD HYDEL DEVELOPMENT ORGANIZATION									
MALAKAND III HYDROPOWER PROJECT									
POWERHOUSE AND 132kV SWITCHYARD MAIN ELECTRICAL SINGLE LINE DIAGRAM									
 MALAKAND III HYDROPOWER CONSULTANTS		DESIGNED R. A. BHUTTA		CHECKED R. A. B		DATE Oct., 2002			
		DRAWN SAEED AHMAD		APPROVED H.D.BANGASH					
		CONTRACT NO. Package-1		DRAWING NO.					
		SCALE :							
				P1-026-01					

Plant Details*

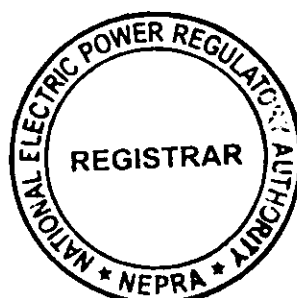
1. General Information

i.	Name of Applicant	Sarhad Hydel Development Organization (SHYDO)
ii.	Business Office	3 rd floor, 330-WAPDA House, Peshawar
iii.	Plant Location	Dargai, Malakand Agency, NWFP
iv.	Type of Generation Facility	Hydel

2. Plant Configuration

i.	Plant Size Installed Capacity Gross ISO (MW)	83.7 MW	
ii.	Plant type	Run of river / canal	
iii.	Water Source	Upper Swat Canal from Swat River	
iv.	Net Head	181.0 meter	
v.	Head race channel	2134 m	
vi.	No. of Tunnels	5	
vii	Tunnel diameter	5.5 meter each	
viii.	Tunnel (s) length (Meter)	Tunnel-1	0532
		Tunnel-2	1382
		Tunnel-3	1052
		Tunnel-4	0203
		Tunnel-5	0160
		Total	3328

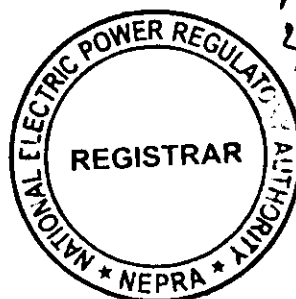
As provided by the applicant



ix.	Number of Units	3
x.	Size of Unit	27.9 MW each
xi.	Unit Type/Make/Model/Speed	Vertical Francis Turbines/Harbin Power Engineering Company, China/HLA 550-LJ-175/500 rpm
xii.	De-rated Capacity at site conditions (MW)	81.0 MW
xiii.	Auxiliary Consumption (MW)	0.508 MW
xiv.	Expected Commissioning date	January 2007
xv.	Expected Life of the Facility from Commercial Operation Date	25 years

3. Plant Characteristics

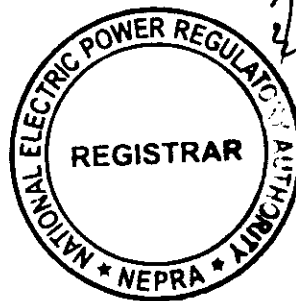
i.	Generation Voltage	11 kv
ii.	Frequency	50 Hz
iii.	Power Factor	0.85 lagging
iv.	Automatic Generation Control	Computerized plant control system (PCS)
v.	Ramping Rate	NA
vi.	Time required to Synchronize to Grid and loading the complex to full load	Minimal



SCHEDULE-II

The net capacity of the Licensee's Generation Facilities

67 Jan 2020

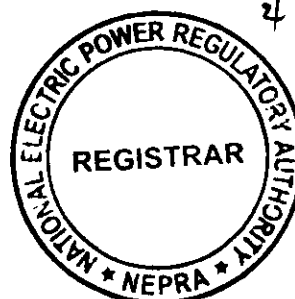


SCHEDULE-II*

1.	Installed Capacity Gross ISO	83.70 MW
2.	De-rated Capacity at Site Conditions	81.00 MW
3.	Auxiliary Consumption	0.508 MW
4.	Net Capacity of the Plant at Site Conditions	80.492 MW

Note

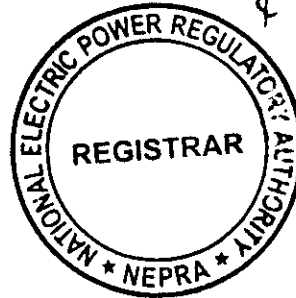
All the above figures are indicative as provided by the Licensee. The Net Capacity available to NTDC for dispatch and other purchasers will be determined through procedures contained in the Agreements or Grid Code.




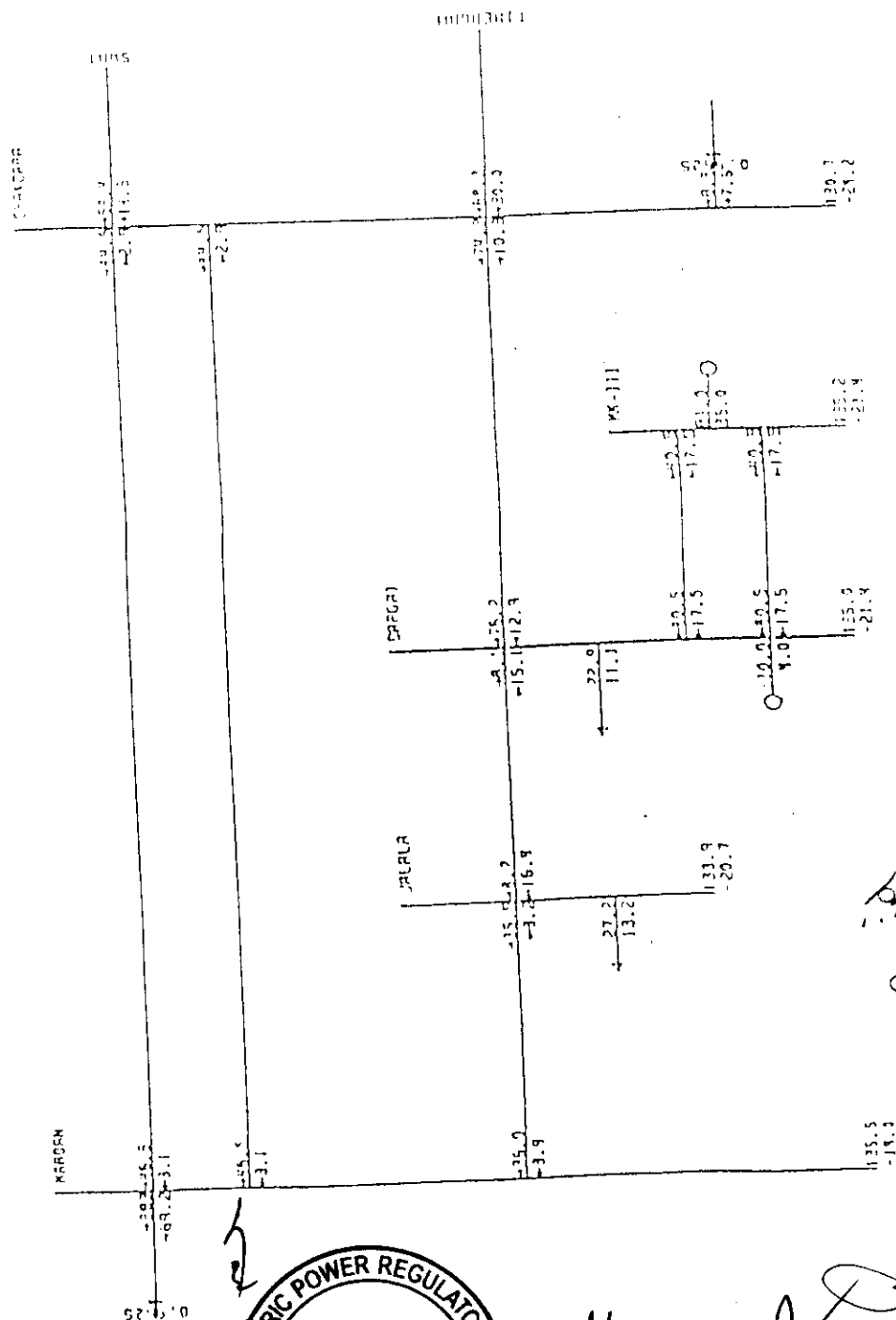
* As provided by the Applicant

INTERCONNECTION SCHEME FOR THE POWER DISPERSAL OF THE PLANT

The power generated from the power plant shall be dispersed to the system directly within the load center of PESCO by constructing a new 132 KV Double Circuit (D/C) Transmission Line of approximately three (3) Kilometers length on LYNX Conductor, connecting Malakand-III power house switchyard with 132 KV Dargai Grid Station.



MALAKAND-III POWER PLANT



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T-1181147.3

POWER-TEK INTERNATIONAL

1. The first step is to identify the problem.

0007 of [redacted] & [redacted] [redacted]
[redacted] of [redacted] [redacted] 117-9448 [redacted]

National Electric Power Regulatory Authority
NEPRA

Application No. LAG-28

Determination of the Authority in the Matter of Grant of Generation Licence to Sarhad Hydel Development Organization (SHYDO) for its Malakand-III Hydro Power Project

Background:

SHYDO is an organization established by the Government of NWFP during 1986-87 with the objective of exploring and developing the hydropower potential in the province and has obtained the status of an autonomous body under the SHYDO Act 1993. Malakand-III is the first major Hydel Power Project initiated by SHYDO which is under construction. The project is located at Dargai in Malakand Agency, falling in the Provincially Administrative Tribal Area (PATA) of NWFP.

2. Recognizing the need to obtain the approval from NEPRA, SHYDO applied for grant of generation licence on 30.12.2004 for Malakand-III Hydropower Project for an installed capacity of 83.7 MW. The application submitted by SHYDO was admitted on 01-03-2005 and brief of petition /salient features were published in daily news papers for inviting comments of interested/affected parties. Total 06 comments were received; none in opposition.

3. Since NEPRA Act was not applicable to PATA at the time when SHYDO applied for grant of generation licence for Malakand-III hydropower project. Therefore, Authority put on hold the proceedings in respect of the licence application of SHYDO for its Malakand-III Hydropower project. NEPRA had already initiated a request for extension of NEPRA Act to FATA and PATA areas of Pakistan. The notification regarding extension of NEPRA Act to the areas of PATA of NWFP was issued on 17.05.2006.

4. Soon after the extension of NEPRA Act to PATA area, the licence application of SHYDO was re-activated and a public hearing was held on 07.07.2006 at Peshawar pursuant to the Authority Decision of June 21, 2006.

5. During the Hearing, SHYDO explained the salient features of the project and informed about the present stage of construction and the benefits of induction of hydel power from Malakand-III in the portfolio of Power Generation mix within the country. The applicant submitted that Malakand-III is a run



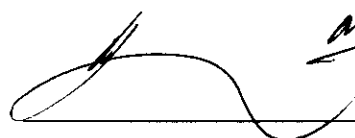
of the canal project emerging from the Swat River where historical hydrological data has confirmed adequate annual water flows and topographic conditions provide significant water level Head for the production of the requested capacity.

6. The Authority considering the data and information provided in the feasibility report, the submissions of the applicant and commentators, observes that the project is expected to be beneficial to the consumers and promotes the public interest at large. No commentator or other interested person has objected to the grant of licence and we have not received any comment or evidence to establish any harmful effect on the environment or any major displacement problem. Increase in ultimate consumer-end price expected due to increased reliance on liquid fuel based generation is certainly a cause of concern on account of affordability and the impact of increased electricity price on the long run sustainability of the current levels of economic growth. The Authority considers that there is a need to establish an economically efficient balance between Thermal and Hydroelectric Generation in the country in the long run through enhanced installation of Hydroelectric Generation plants in the country.

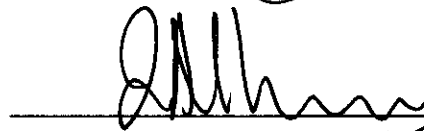
7. In view of the above the Authority decides to grant a Licence for Generation of electricity by means of Hydropower to SHYDO for its Malakand-III Hydropower generating station in accordance with the Articles and Schedules set in the form herewith.

Authority


Abdul Rahim Khan (Member)


21/8/06


Zafar Ali Khan (Member)


21/8/06

Nasiruddin Ahmed (Vice Chairman/Member)


21/8/06

Lt Gen (R) Saeed-uz-Zafar (Chairman)



National Electric Power Regulatory Authority
NEPRA

Application No. LAG-28

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Authority

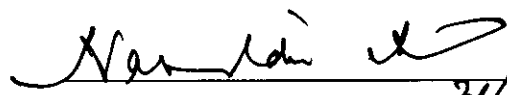

Abdul Rahim Khan (Member)

 *ahri*
21/8/06

Zafar Ali Khan (Member)

 21/8/06

Nasiruddin Ahmed (Vice Chairman/Member)

 21/8/06


Lt Gen (R) Saeed-uz-Zafar (Chairman)