



Registrar

M/P

National Electric Power Regulatory Authority

Islamic Republic of Pakistan

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad
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Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/R/DL/LAG-482/47829-35

December 31, 2020

Mr. Abdul Karim Qureshi,
Chief Executive Officer,
Uzghor Hydro Power Company (Private) Limited,
59-E, Street – 7, Sector 1-10/3,
Islamabad.
Contact No. 051 4446873-74

**Subject: Grant of Generation Licence No. IGSPL/106/2020
Licence Application No. LAG-482
Uzghor Hydro Power Company (Private) Limited (UHPCPL)**

Reference: UHPCPL's application vide letter No. Nil dated March 02, 2018.

Enclosed please find herewith Determination of the Authority in the matter of Application of "Uzghor Hydro Power Company (Private) Limited (UHPCPL)" for the Grant of Generation Licence along with Generation Licence No. IGSPL/106/2020 annexed to this determination granted by the National Electric Power Regulatory Authority (NEPRA) to Uzghor Hydro Power Company (Private) Limited (UHPCPL) for its 82.25 MW Hydropower Project located on River Golen Gol, District Chitral, in the Province of Khyber Pakhtunkhwa, pursuant to Section 14B of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997/Amendment Act, 2018.

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

Enclosure: As Above



31 12 20
(Syed Safer Hussain)

Copy to:

1. Secretary, Power Division, Ministry of Energy, A-Block, Pak Secretariat, Islamabad.
2. Managing Director, NTDC, 414-WAPDA House, Lahore.
3. Chief Executive Officer, CPPA-G, ENERCON Building, Sector G-5/2, Islamabad.
4. Chief Executive Officer, Peshawar Electric Supply Company Limited, PESCO House, Shami Road Peshawar.
5. Director General, Environment Protection Department, Government of KPK, 3rd Floor, Old Courts Building, Khyber Road, Peshawar.
6. Secretary, Energy and Power Department, Government of Khyber Pakhtunkhwa, 1st Floor, A-Block, Abdul-Wali Khan Multiplex, Civil Secretariat, Peshawar.

National Electric Power Regulatory Authority
(NEPRA)

Determination of the Authority
in the Matter of Application of Uzghor Hydro Power Company
(Private) Limited for the Grant of Generation Licence

December , 2020
Case No. LAG-482

(A). Background

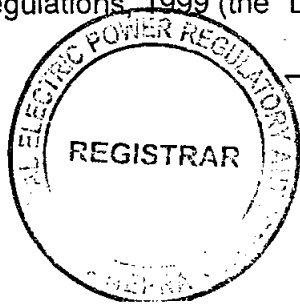
(i). In order to promote private investments in power sector, Government of Pakistan (GoP) has set up Private Power and Infrastructure Board (PPIB) as a one-window facilitator for the potential investors.

(ii). In this regard, PPIB has formulated the "Power Generation Policy, 2015" (the "Policy") to encourage and ensure exploitation of indigenous resources. In consideration of the said, PPIB has issued Letter of Intent (LoI) to different entrepreneurs/power developers. One such LoI was issued to consortium of Sinohydro Corporation, China (SHC/"Main Sponsor") and Sachal Engineering Works (Private) Limited (SEWPL) for developing/setting up approximately 58.0 MW Turtonas-Uzghor Hydel Power Project at Golen Gol River, District Chitral in the province of Khyber Pakhtunkhwa. According to the terms and condition of LoI, the sponsors of the project carried out detailed feasibility study of the project including technical study, environmental study, financial study etc.

(iii). In order to implement the project, the sponsors of the project incorporated a Special Purpose Vehicle (SPV) in the name of Uzghor Hydro Power Company (Private) Limited (UHPCPL) and approached the Authority for the grant of generation licence.

(B). Filing of Application

(i). UHPCPL submitted an application on February 19, 2020 for the grant of Generation Licence in terms of Section-14B of Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") read with the relevant provisions of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Licensing Regulations").



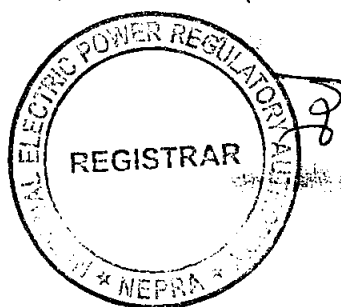
(ii). The Registrar examined the submitted application and found the same in compliant with the Licensing Regulations. Accordingly, the Registrar submitted the application for the consideration of the Authority to decide the admission of the same or otherwise. The Authority considered the matter and found the form and content of the application in substantial compliance with Regulation-3 of the Licensing Regulations. Accordingly, the Authority admitted the application on March 17, 2020 for consideration of the grant of the Generation Licence as stipulated in Regulation-7 of the Licensing Regulations. The Authority approved a notice of admission to be published in the press for inviting comments of general public, interested and affected persons in the matter as stipulated in Regulation-8 of the Licensing Regulations. Accordingly, the said notice was published in one (01) Urdu and one (01) English newspaper on March 20, 2020.

(iii). In addition to the above, the Authority also approved a list of stakeholders for seeking their comments for assistance of the Authority in the matter in terms of Regulation-9(2) of the Licensing Regulations. Accordingly, letters were sent to different stakeholders as per the approved list on March 20, 2020, soliciting their comments for assistance of the Authority.

(C). Comments of Stakeholders

(i). In reply to the above, the Authority received comments from two (02) stakeholders including Central Power Purchasing Agency (Guaranteed) Limited (CPPA-G) and Indus River System Authority (IRSA). The salient points of the comments offered by the said stakeholders are summarized below:-

- (a). CPPA-G submitted that the regulatory requirements for issuance of Generation Licence are envisaged in the NEPRA Licensing (Generation) Rules, 2000 (the "Generation Rules") wherein Rule-3(5) of the said rules stipulates that the project must satisfy the 'least cost option criteria'. Further, the GIS is pre-requisite for the grant of Generation Licence and the same has not been approved by National Transmission and Despatch Company Limited (NTDC). PPIB approved the feasibility study of the project without taking into consideration of the Indicative Generation Capacity Expansion Plan (IGCEP). It was also highlighted by CPPA-G that

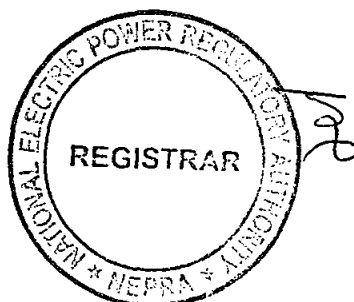


through various correspondences it has requested the Authority not to consider the grant of licence till the approval of IGCEP and Transmission System Expansion Plan (TSEP) which will determine how much additional capacity is required to be inducted in the system. In view of the above, CPPA-G did not support the grant of generation licence to UHPCPL; and

- (b). IRSA stated that it had issued No Objection Certificate (NOC) to the company for development of 82.25 MW hydel power project located in district Chitral, in the province of KPK.

(ii). The Authority examined the above comments and in view of the observations of CPPA-G, considered it appropriate to seek the perspective of UHPCPL. In response to the said, UHPCPL submitted that NTDC has confirmed that an integrated GIS will be carried out jointly with PEDO for all future projects in districts of Chitral and Dir. The company referred to meeting of Panel of Experts (POEs) duly represented by all important stakeholders including NTDC as well as CPPA-G whereby NTDC reiterated its stance that due to the limitation of availability of corridor UHPCPL is not required to conduct GIS on individual basis therefore waiver for the same will be required. In view of the said, UHPCPL requested the Authority to exempt it from submission of GIS at this stage. Regarding approval of feasibility study without considering IGCEP, it was stated that the project was not included in the initial draft of IGCEP when feasibility study was being carried out however, the same has now been included in the latest version of IGCEP.

(iii). UHPCPL remarked that the Authority has mandate to safeguard the interests of investor and consumer through its decisions based on commercial principles. Further, the Authority may consider the fact that PPIB approved the development of project under IPP mode in accordance with the Policy and PoEs comprising of members from relevant Govt. ministries, individual experts, NTDC and CPPA-G has already approved the feasibility study with commissioning date of 2025. In consideration of the said, the company has requested the Authority to consider the grant of Generation Licence so that it may proceed to develop the project in accordance with the timeline approved by PoEs.



(iv). The Authority considered the above submissions of UHPCPL and decided to proceed further in the matter for the consideration of grant of generation licence as stipulated in the Licensing Regulations and the Generation Rules.

(D). Evaluation/Findings

(i). The Authority has reviewed the submissions of UHPCPL including the information provided in its application for the grant of Generation Licence, comments of the stakeholder and the rejoinder in the matter. Further to the said, the Authority has also considered the feasibility study of the project and Environmental Impact Assessment (EIA) of the project, the Policy and the provisions of the NEPRA Act and the relevant rules & regulations made thereunder.

(ii). The Authority has observed that PPIB invited Expressions of Interest (EOI) through an advertisement published in newspapers on January 14, 2016 for development of the project as a raw site. The consortium of SHC and SEWPL submitted the proposal for development of hydel project and was declared successful after evaluation of the bids. Accordingly, PPIB issued Lol to the consortium of said companies as explained in the preceding paragraphs. It is pertinent to mention that the main sponsor of the project is SHC which is state-owned enterprise of Government of China with a registered capital of RMB Four Billion. SHC is a clean energy conglomerate specializing in development and operation of large-scaled hydropower projects. The principal operations of SHC include power sector investment, engineering, construction, management, electricity production and provision of related technical services for hydropower projects. Currently, the company has 524 international projects in more than 74 countries, with total contract value of nearly USD 42.50 billion. Whereas, SEWPL is a leading construction and civil engineering company of Pakistan involved in construction of large bridges, roads and works for hydropower projects. It has also ventured into power generation business through its group concern namely Riali Hydro Power Company (Private) Limited which is setting up a Run-Off River 7.08 MW high head Hydropower Plant near Muzaffarabad, Azad Kashmir on Build Own Operate Transfer (BOOT) basis.

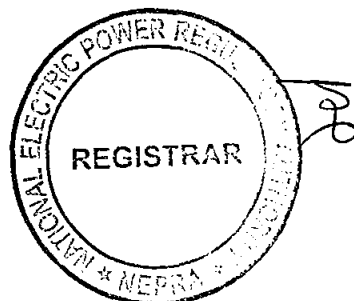
(iii). The Authority has noted that the applicant company (i.e. UHPCPL) is a private limited company incorporated on January 01, 2020 under Section-16 of the Companies Act, 2017 (XIX of 2017) having Corporate Universal Identification No.



0144794. The registered/business office of the company is located at 59-E, Street No. 07, Sector I-10/3, Islamabad. According to the Memorandum of Association, the principal object of the company, *inter alia*, includes, developing, designing, establishing, constructing, running, operating, maintaining and managing hydroelectric power generating plants for the generation, supply & transmission of electric power. According to the submitted information, the total outlay of the project will be approximately U.S. \$ 204.602 million which will be financed through a combination of debt (U.S. \$ 163.68 million) and equity (U.S. \$ 40.92 million) in a ratio of 80:20.

(iv). The Authority has reviewed the feasibility study of the project and same has revealed that the Turtonas-Uzghor Hydel Power Plant was initially identified by GTZ/SHYDO through "Identification of Hydropower Development Potential in Chitral Valley" in February 2001. After the award of the project, the sponsors of projects carried out detailed feasibility study through joint venture of Consultants comprising of Technical, Engineering and Management Private Limited Pakistan - TEAM Consultants, Pakistan and FICHTNER GmbH & Co. KG, Germany. The PoEs of PPIB approved the feasibility study of the project with a revised capacity of 82.25 MW on October 31, 2018.

(v). According to the feasibility study, nine (9) different locations and alternatives were studied with regard to the placement of various hydraulic structures and the waterway leading to the powerhouse and ultimately discharging back to the river through the tailrace. A number of sites for diversion weir and powerhouse were also identified and studied. Out of the said alternatives, the best suitable alternative was found to be along right bank of the Golen Gol where a diversion weir is placed about 300 meters upstream of Turtonas existing Wooden Bridge along Golen Gol, power intake will be along right abutment of diversion weir. The diverted water from power intake will enter in to upstream connecting canal which will transfer the water to sedimentation basin. From there headrace tunnel lead the water to powerhouse via surge tank, pressure shaft and pressure tunnel. After generating electricity through hydro-turbine water pass to Golen Gol through open tailrace. The powerhouse is proposed along right bank of Golen Gol near the Village of Uzghor and about 300 to 400 meters upstream of diversion weir of the 108 MW, Golen Gol Hydel Power Plant, of WAPDA, which is already in operation.

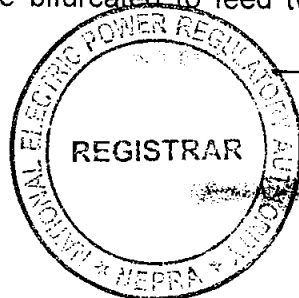


(vi). As explained above, UHPCPL has submitted the current application for the grant of Generation Licence for its Turtonas-Uzghor Hydel Power Project which is a 82.25 MW Run of River Project proposed to be developed on Golen Gol river, district Chitral in the province of Khyber Pakhtunkhwa. The Golen Gol river is a left bank tributary of Mastuj River and joins with Mastuj River about 22 km north-east of Chitral Town near village of Kaghozi. The project site is accessible from Chitral Town by truck-able road (Chitral-Buni Road) up to the confluence of Golen Gol and Mastuj River and along Golen Gol River up to the diversion weir of existing Golen Gol Hydel Power Plant. The identified weir site on Golen Gol is approx. 8 km upstream of the existing Golen Gol Hydropower Project intake. The powerhouse site is located about 33 Km north-east of Chitral Town.

(vii). The project comprises of a main diversion weir and its appurtenant structures are proposed to be built in two sections. The overall weir length will comprise of an overflow fixed weir and under-sluice section. The fixed weir has been designed to pass a flood discharge of 1150 m³/s which has a return period of 1000 years. The ogee shaped overflow section of weir is 40 m wide. The under-sluice section of weir has 2 no. vertical lift gates. The power intake inlet consists of 2 No. gated. Each inlet is equipped with vertical stop-logs and trash-rack inclined at an angle of 82° with the horizontal floor of intake. There is provision of stop logs at the downstream side of intake gates in order to carry out repairs of one gate in lifting position while the other gate is still open and diverting flows to the connecting channel.

(viii). The flows will then be carried through a rectangular connecting channel to the sand trap. The sand trap structure has been proposed and will be a reinforced concrete structure. The total length of sand trap will be 112.64 m; including 26.54 m long transition from the connecting channel end. The width of combined structure is 25.30 m while its depth varies between 8.55 m and 11.5 m. The flows will resume through a rectangular connecting channel to headrace tunnel. The headrace tunnel is designed as a horseshoe shaped free flow conduit of 3.5 m diameter. It is approx. 4.5 km long and has a slope of 1 in 1000.

(ix). The headrace tunnel then shall be connected to a 2.5 m diameter vertical shaft and 2.5 m diameter horizontal pressure tunnel. The horizontal pressure tunnel will further be bifurcated to feed two turbine units having 41.125 MW and



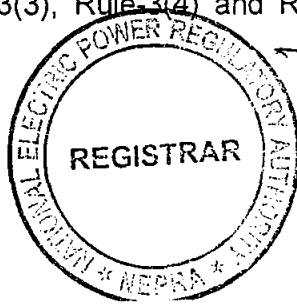
having each bifurcation a 2 m diameter. An open type powerhouse will be provided on the right bank of river. The powerhouse will be equipped with two Pelton turbine units having vertical axis. The concrete lined free flow tailrace will convey the discharge from the draft tube outlet gates up to the Golen Gol River.

(x). The proposed installed capacity of the Hydel Power Plant is 82.25 MW consisting of two (02) Vertical Pelton type turbines (2 x 41.125 MW). The capacity of the project has been optimized keeping in view the design discharge of 20 m³/s (706 Cusecs). The Hydel Power Plant is a medium head run of river project having gross head of 494.1 m and net head 477.1 m, respectively. The mean annual energy from the project will be approximately 382.33 GWh at plant factor of 53.06%.

(xi). Regarding interconnection of the project with the National Grid, the Authority has gone through the submissions of UHPCPL and observed that as per the Lol, UHPCPL was required to carry out GIS of the project. However, during the meeting of PoEs for reviewing the feasibility study of the project, NTDC highlighted that there is limitation of carrying out project specific GIS therefore, an integrated GIS will be required to be conducted for evacuation of power from Dir, Chitral and Swat region due to which UHPCPL will not carry out GIS for its project. The Authority has noted that PEDO is in process of conducting the required studies for the hydel projects to be located in Chitral corridor for which hiring of consultant is in final stage.

(xii). The Authority has observed that the proposed project, for which Generation Licence is being sought, is based on clean source of water and does not cause pollution as in the case of conventional power plants. However, the operation of the generation facility/hydro power plant may cause soil pollution, water pollution and noise pollution during construction and operation. In this regard, the Authority has observed that UHPCPL carried out the Environmental Impact Assessment (EIA) study for the project and submitted the same for the consideration and approval of Environmental Protection Agency, Government of KPK (EPAGoKPK). In this regard, EPAGoKPK has already issued a No Objection Certificate (NOC) to the company for the construction of the project.

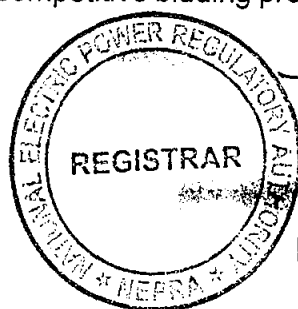
(xiii). In terms of Rule-3 of the Generation Rules, the Authority may grant a generation licence to any person to engage in the generation business. The said rule stipulates various conditions pertaining to the grant of generation licence as explained in Rule-3(2), Rule-3(3), Rule-3(4) and Rule-3(5) of the Generation Rules. In the



particular case under consideration, the Authority considers that conditions of Rule-3(2) and Rule-3(3) stand satisfied as UHPCPL has provided details of location, technology, size, net capacity/energy yield, interconnection arrangements, technical limits, technical functional specifications and other details specific to the generation facility/Hydel Power Plant. The provision of Rule-3(4) of the Generation Rules regarding holding a public hearing is not applicable as there was no issue which required this exercise.

(xiv). The Rule-3(5) of the Generation Rules stipulates that the Authority may refuse to issue a Generation Licence where the site, technology, design, fuel, tariff or other relevant matters pertaining to the generation facility proposed in an application for a generation licence are either not suitable on environmental grounds or do not satisfy the least cost option criteria. In this regard, the Rule-3(5) of the Generation Rules also stipulates the conditions pertaining to least cost option criteria which include (a). sustainable development or optimum utilization of the renewable or non-renewable energy resources proposed for generation of electric power; (b). the availability of indigenous fuel and other resources; (c). the comparative costs of the construction, operation and maintenance of the proposed generation facility against the preferences indicated by the Authority; (d). the cost and right-of-way considerations related to the provision of transmission and interconnection facilities; (e). the constraints on the transmission system likely to result from the proposed generation facility and the costs of the transmission system expansion required to remove such constraints; (f). the short-term and the long-term forecasts for additional capacity requirements; (g). the tariff resulting or likely to result from the construction or operation of the proposed generation facility; and (h) the optimum utilization of various sites in the context of both the short-term and the long-term requirements of the electric power industry as a whole.

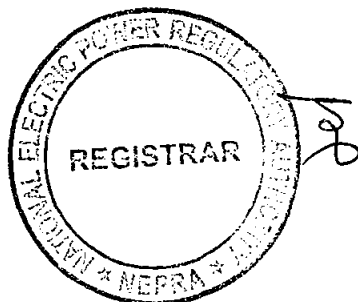
(xv). In consideration of the above, the Authority is of the considered opinion that development of the indigenous resources specially the clean sources are to be accorded priority to meet with the future demand of the country. In this regard, the Authority has observed that there is huge potential of hydro which is currently untapped but is being pursued at the provincial as well as Federal Govt. level. In the particular case of UHPCPL, the Federal Govt. through PPIB called for EOI for the development of the project as a raw site and the sponsors of the project were awarded the site through open competitive bidding processes. The Authority considers that the



development of the proposed corridor where the project is located will be based on the indigenous resources of hydel will result in sustainable development and optimum utilization of the said energy resources. The Authority considers that hydel power projects have a useful life which is much more than the fossil fuel and other RE based power plants of solar and wind. The said fact can be gauged from the fact that there are hydel projects which had been operational for more than fifty year and still supplying to the national grid meaning thereby that the comparative costs of the construction, operation and maintenance of the hydel based generation facility like the one under consideration are much lower than the other types. As explained above, the GIS of the project as well as the corridor is still under preparation and based on the facts on record, it is very likely that issues of the cost and right-of-way considerations related to the provision of transmission and interconnection facilities and issues pertaining to the potential constraints on the transmission system likely to result from the proposed generation facility and the costs of the transmission system expansion required to remove such constraints will be duly considered and addressed there. The Authority is of the considered opinion that the development of the corridor will not only result in meeting with additional capacity requirements in the long term scenario but will result in optimum utilization of various sites in the context of both the short-term and the long-term requirements of the electric power industry. In view of the said, the Authority considered that the project of UHPCPL fulfills the eligibility criteria for grant of Generation Licence as stipulated in the NEPRA Act, rules, regulations and other applicable documents.

(E). Grant of Generation Licence

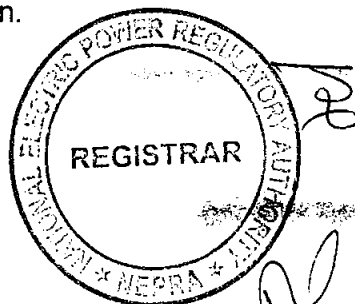
(i). The sustainable and affordable energy/electricity is a key prerequisite for socio-economic development of any country. In fact, the economic growth of any country is directly linked with the availability of safe, secure, reliable and cheaper supply of energy/electricity. In consideration of above and reasons explained in the preceding paragraphs, the Authority is of the considered opinion that for sustainable development, all indigenous power generation resources including hydel must be developed on priority basis.



(ii). The existing energy mix of the country is heavily skewed towards the thermal power plants, mainly operating on imported fuel. The import of fuel for electric power generation not only causes depletion of the precious foreign exchange reserves of the country but is also an environmental concern. Therefore, in order to achieve sustainable development, it is imperative that indigenous resources are given priority for power generation and their development be encouraged. The Authority considers that the proposed project of UHPCPL will not only help in diversifying the energy portfolio of the country but will also result in enhancing the energy security of the country by reducing the dependence on imported fuel but and thus help in reduction in carbon emission by generating clean electricity, thus improving the environment.

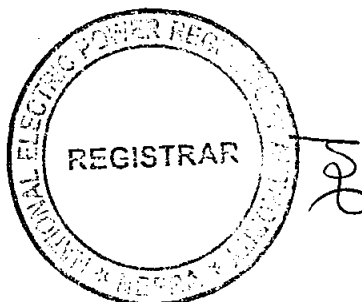
(iii). The Rule-5(1) of the Generation Rules stipulates that the term of a Generation Licence is to be consistent with the maximum expected useful life of the units comprised in a generating facility, except where an applicant consents to a shorter term. According to the information provided by UHPCPL, the expected Commercial Operation Date (COD) of the generation facility/Hydel Power Plant is January 01, 2025 and will have a useful life of more than thirty (30) years from its COD. In this regard, UHPCPL has requested that the term of the proposed generation licence may be fixed as thirty years. In consideration of the said, the Authority considers that the submissions of UHPCPL are in line with the industry standards and norms. In view of the said and considering the fact that UHPCPL has consented for a shorter term of thirty (30) years, the Authority fixes the term of the generation licence as thirty (30) years from COD of the project, subject to the Section 14-B of the NEPRA Act.

(iv). Regarding the tariff, it is hereby clarified that under Section-7(3)(a) of the NEPRA Act, determining tariff, rate and charges etc. is the sole prerogative of the Authority. In this regard, UHPCPL in terms of the relevant provisions of the relevant rules has already filed a petition for determination of tariff of the project. The Authority has admitted the said petition and the same in advance stage of processing. In view of the said, the Authority considers appropriate to direct UHPCPL to charge the power purchaser/CPA-G only such tariff which has been determined, approved or specified by it. In view of the said, the Authority decides to include a specific article in the generation licence and directs UHPCPL to adhere to the said in letter and spirit without any exception.



(v). About the compliance with the environmental standards, as discussed in the preceding paragraphs, UHPCPL has provided the NOC from EPAGoKPK and has confirmed that the project will comply with the required standards during the term of the Generation Licence. In view of the importance of the issue, the Authority has decided to include a specific article in the Generation Licence along with other terms and conditions making it obligatory for UHPCPL to comply with relevant environmental standards at all times. Further, the Authority directs UHPCPL to submit a report on a bi-annual basis, confirming that operation of its generation facility is compliant with the required environmental standards as prescribed by the concerned environmental protection agency. As the proposed generation facility/Hydel Power Plant of UHPCPL will be using hydel source for generation of power, therefore the project may qualify for the Carbon Credits. In this regard, an article for carbon credits and sharing its proceeds with the power purchaser has been included in the generation licence and UHPCPL is directed to adhere to the same.

(vi). Regarding GIS of the project as explained at para D(xi) above, the hydel project of UHPCPL will be located in district Chitral in the province of Khyber Pakhtunkhwa where a number of hydel projects proposed by different agencies are in various stages of implementation. In this regard, the dispersal of electric power from the proposed projects is to be considered in a consolidated manner instead of an individual project. In consideration of the said, the Authority has observed that PEDO is in process of getting conducted the required study and the same is in advance stage. In view of the said, the Authority directs PEDO and NTDC to complete the integrated GIS at earliest so that sponsors of various projects in the said region/corridor may be able to achieve remaining milestones within stipulated time. In view of the said, the Authority directs UHPCPL to apply for modification as per the relevant regulations once GIS is finalized and approved by the relevant agency to reflect the same in its generation licence. The Authority also directs UHPCL not to start any physical work on the project unless it has the approval of GIS duly incorporated in the generation licence and executed the concessional documents for the project.

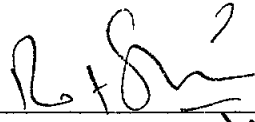


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(vii). In view of the above, the Authority hereby approves the grant of Generation Licence to UHPCPL on the terms and conditions set out in the generation licence annexed to this determination. The grant of generation licence will be subject to the provisions contained in the NEPRA Act, relevant rules, regulations framed thereunder and other applicable documents.

Authority


Rafique Ahmed Shaikh
(Member)


29/12/20


Rehmatullah Baloch
(Member)


30/12/2020

Engr. Bahadur Shah
(Member)

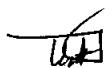


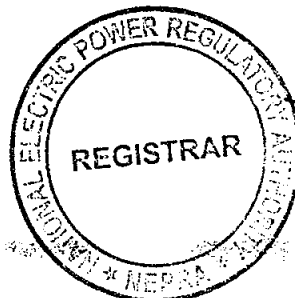
Saif Ullah Chattha
(Member)

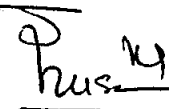

30.12.2020

Tauseef H. Farooqi
(Chairman)

Did not Attend-Away






31 12 20

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

GENERATION LICENCE

No. IGSP/106/2020

In exercise of the powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section-14B of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997/Amendment Act, 2018, the Authority hereby grants a Generation Licence to:

UZGHOR HYDRO POWER COMPANY (PRIVATE) LIMITED

Incorporated Under Section-16
of the Companies Act, 2017 (XIX of 2017) Having Corporate Universal
Identification No. 0144794, dated January 01, 2020

**for its Hydel Based Generation Facility/Turtonas-Uzghor Hydel
Power Project Located on River Golen Gol, District Chitral
in the Province of Khyber Pakhtunkhwa**

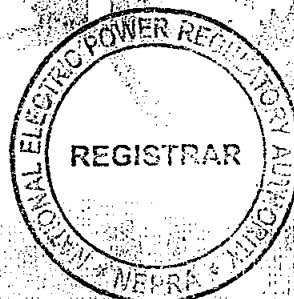
(Total Installed Capacity: 82.25 MW Gross)

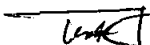
to engage in generation business subject to and in accordance with the
Articles of this Licence.

Given under my hand this on 31st day of December Two
Thousand & Twenty and expires on 31th day of December
Two Thousand & Fifty Four.



Registrar



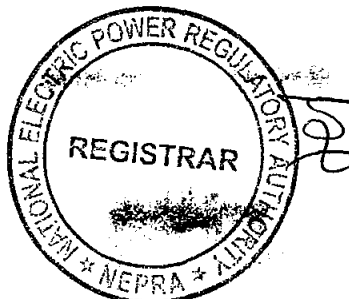




Article-1 **Definitions**

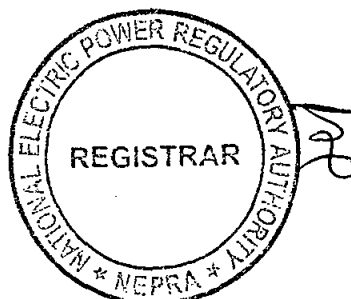
1.1 In this licence

- (a). "Act" means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 as amended or replaced from time to time;
- (b). "Applicable Documents" mean the Act, the rules and regulations framed by the Authority under the Act, any documents or instruments issued or determinations made by the Authority under any of the foregoing or pursuant to the exercise of its powers under the Act, the Grid Code, the applicable Distribution Code, the Commercial Code, or the documents or instruments made by the Licensee pursuant to its generation licence, in each case of a binding nature applicable to the Licensee or, where applicable, to its affiliates and to which the Licensee or any of its affiliates may be subject;
- (c). "Applicable Law" means all the Applicable Documents;
- (d). "Authority" means the National Electric Power Regulatory Authority constituted under Section-3 of the Act;
- (e). "Bus Bar" means a system of conductors in the generation facility/Hydel Power Plant of the Licensee on which the electric power from all the generators is collected for supplying to the Power Purchaser;
- (f). "Carbon Credits" mean the amount of Carbon Dioxide (CO₂) and other greenhouse gases not produced as a result of generation of electric energy by the generation facility/Hydel Power Plant and other environmental air quality credits and related emissions reduction credits or benefits (economic or otherwise) related to the generation of electric energy by the generation facility/Hydel Power

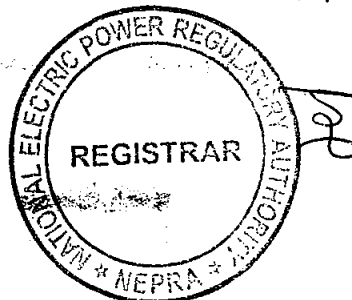


Plant, which are available or can be obtained in relation to the generation facility/Hydel Power Plant after the COD;

- (g). "Commercial Code" means commercial code prepared by CPPA-G under the National Electric Power Regulatory Authority (Market Operator, Registration, Standards and Procedure) Rules, 2015 as amended or replaced from time to time;
- (h). "Commercial Operations Date (COD)" means the day immediately following the date on which the generation facility/Hydel Power Plant of the Licensee is commissioned;
- (i). "Commissioning" means the undertaking of the Commissioning Tests of the generation facility/Hydel Power Plant as stipulated in the PPA;
- (j). "CPPA-G" means Central Power Purchasing Agency (Guarantee) Limited or any other entity created for the like purpose;
- (k). "Distribution Code" means the distribution code prepared by the concerned XW-DISCO and approved by the Authority, as may be revised from time to time with necessary approval of the Authority;
- (l). "Generation Rules" mean the National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000 as amended or replaced from time to time;
- (m). "Grid Code" means the grid code prepared and revised from time to time by NTDC with necessary approval of the Authority;
- (n). "GoP" means the Government of Pakistan acting through the PPIB which has issued or will be issuing to the Licensee a LoS for the design, engineering, construction, insuring, commissioning, operation and maintenance of the generation facility/Hydel Power Plant;



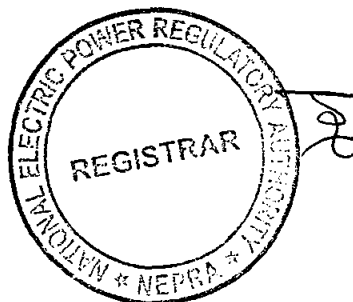
- (o). "Hydel Power Plant" means a generation facility for production of electric power using water as source;
- (p). "IEC" means "the International Electrotechnical Commission or its successors or permitted assigns;
- (q). "IEEE" means the Institute of Electrical and Electronics Engineers or its successors or permitted assigns;
- (r). "Implementation Agreement (IA)" means the implementation agreement signed or to be signed between the GoP and the Licensee in relation to this particular generation facility/Hydel Power Plant, as may be amended from time to time;
- (s). "Letter of Support (LoS)" means the letter of support issued or to be issued by the GoP through the PPIB to the Licensee;
- (t). "Licensee" means Uzghor Hydro Power Company (Private) Limited or its successors or permitted assigns;
- (u). "Licensing Regulations" mean the National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999 as amended or replaced from time to time;
- (v). "Net Delivered Energy" means the net electric energy expressed in kWh generated by the generation facility/Hydel Power Plant of the Licensee at its outgoing Bus Bar and delivered to the Power Purchaser;
- (w). "NTDC" means National Transmission and Despatch Company Limited or its successors or permitted assigns;
- (x). PEDO" means Pakhtunkhwa Energy Development Organization or any other entity created for the like purpose established by the Govt. of Khyber Pakhtunkhwa to facilitate, promote and encourage



development of private sector participation for development of projects for electric power in the province of Khyber Pakhtunkhwa;

- (y). "PESCO" means Peshawar Electric Supply Company Limited or its successors or permitted assigns;
- (z). "Policy" means the Policy for Power Generation, 2015 of GoP as amended from time to time;
- (aa). "Power Purchaser" means CPPA-G which will be purchasing electric energy from the Licensee either on behalf of all XW-DISCOs or any single XW-DISCO, pursuant to an PPA for procurement of electric energy;
- (bb). "Power Purchase Agreement (PPA)" means the power purchase agreement, entered or to be entered into by and between the Power Purchaser and the Licensee, for the purchase and sale of electric energy generated by the generation facility/Hydel Power Plant, as may be amended by the parties thereto from time to time;
- (cc). "PIIB" means the Private Power and Infrastructure Board or any other entity created for the like purpose established by the GoP to facilitate, promote and encourage development of renewable energy in the country;
- (dd). "SCADA System" means the supervisory control and data acquisition system for gathering of data in real time from remote locations to control equipment and conditions;
- (ee). "XW-DISCO" means an Ex-WAPDA distribution company engaged in the distribution of electric power.

1.2 The words and expressions used but not defined herein bear the meaning given thereto in the Act or Generation Rules and Licensing Regulations issued under the Act.



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Article-2 **Applicability of Law**

This licence is issued subject to the provisions of the Applicable Law, 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 generation facility/Hydel Power Plant of the Licensee are set out in Schedule-I of this licence.

3.2 The net capacity of the generation facility/Hydel Power Plant of the Licensee is set out in Schedule-II of this licence. The Licensee shall provide the final arrangement, technical and financial specifications and other specific details pertaining to its generation facility/Hydel Power Plant before its COD.

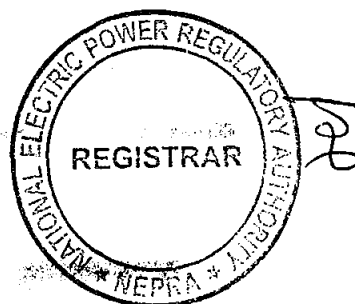
Article-4 **Term of Licence**

4.1 This licence shall become effective from the date of its issuance and will have a term of thirty (30) years from the COD of the generation facility/Hydel Power Plant of the Licensee subject to Section 14-B of the Act.

4.2 Unless suspended or revoked earlier or Licence ceases to have effect, the Licensee may apply for renewal of this Licence ninety (90) days prior to the expiry of the above term, as stipulated in the Licensing Regulations.

Article-5 **Licence fee**

The Licensee shall pay to the Authority the licence fee as stipulated in the National Electric Power Regulatory Authority (Fees) Rules, 2002 as amended or replaced from time to time.



Article-6
Tariff

The Licensee shall charge only such tariff from the Power Purchaser which has been determined, approved or specified by the Authority.

Article-7
Competitive Trading Arrangement

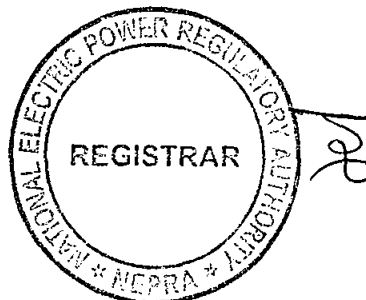
7.1 The Licensee shall participate in such manner as may be directed by the Authority from time to time for development of a Competitive Trading Arrangement.

7.2 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 into between the Licensee and another party with the approval of the Authority.

7.3 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 Generation 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.



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Article-9
Compliance with Performance Standards

The Licensee shall comply with the relevant provisions of the National Electric Power Regulatory Authority Performance Standards (Generation) Rules 2009 as amended or replaced from time to time.

Article-10
Compliance with Environmental & Safety Standards

10.1 The generation facility/Hydel Power Plant of the Licensee shall comply with the environmental and safety standards as may be prescribed by the relevant competent authority from time to time.

10.2 The Licensee shall provide a certificate on a bi-annual basis, confirming that the operation of its generation facility/Hydel Power Plant is in conformity with required environmental standards as prescribed by the relevant competent authority.

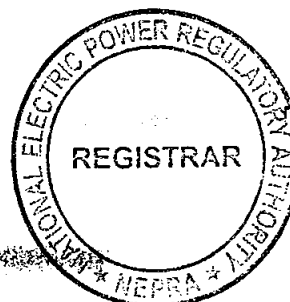
Article-11
Power off take Point and Voltage

The Licensee shall deliver the electric energy to the Power Purchaser at the outgoing Bus Bar of its generation facility/Hydel Power Plant. The Licensee shall be responsible for the up-gradation (step up) of generation voltage up to the required dispersal voltage level.

Article-12
Performance Data

12.1 The Licensee shall install properly calibrated automatic computerized recording device(s) for measuring flow of water at its generation facility/Hydel Power Plant for recording of data.

12.2 The Licensee shall install SCADA System or compatible communication system at its generation facility/Hydel Power Plant as well as at the side of the Power Purchaser.



12.3 The Licensee shall transmit the data for flows of water and power output of its generation facility/Hydel Power Plant to the control room of the Power Purchaser.

Article-13
Provision of Information

In accordance with provisions of Section-44 of the Act, the Licensee shall be obligated to provide the required information in any form as desired by the Authority without any exception.

Article-14
Emissions Trading /Carbon Credits

The Licensee shall process and obtain expeditiously the Carbon Credits admissible to the generation facility/Hydel Power Plant. The Licensee shall share the said proceeds with the Power Purchaser as per the relevant policy.

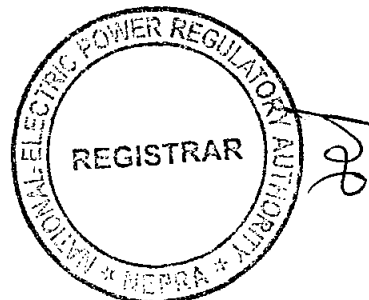
Article-15
Design & Manufacturing Standards

The generation facility/Hydel Power Plant of the Licensee shall be designed, manufactured and tested according to the latest IEC, IEEE standards or any other equivalent standard in the matter. All the plant and equipment of generation facility/Hydel Power Plant shall be unused and brand new.

Article-16
Power Curve

The Power Purchaser shall verify the power curve of the generation facility of the Licensee, as part of the Commissioning tests according to the latest IEC/IEEE standards and shall be used to measure its performance.







Article-17
Compliance with Applicable Law

The Licensee shall comply with the provisions of the Applicable Law, guidelines, directions and prohibitory orders of the Authority as issued from time to time.

Article-18
Corporate Social Responsibility

The Licensee shall provide the descriptive as well as monetary disclosure of its activities pertaining to Corporate Social Responsibility (CSR) on an annual basis.



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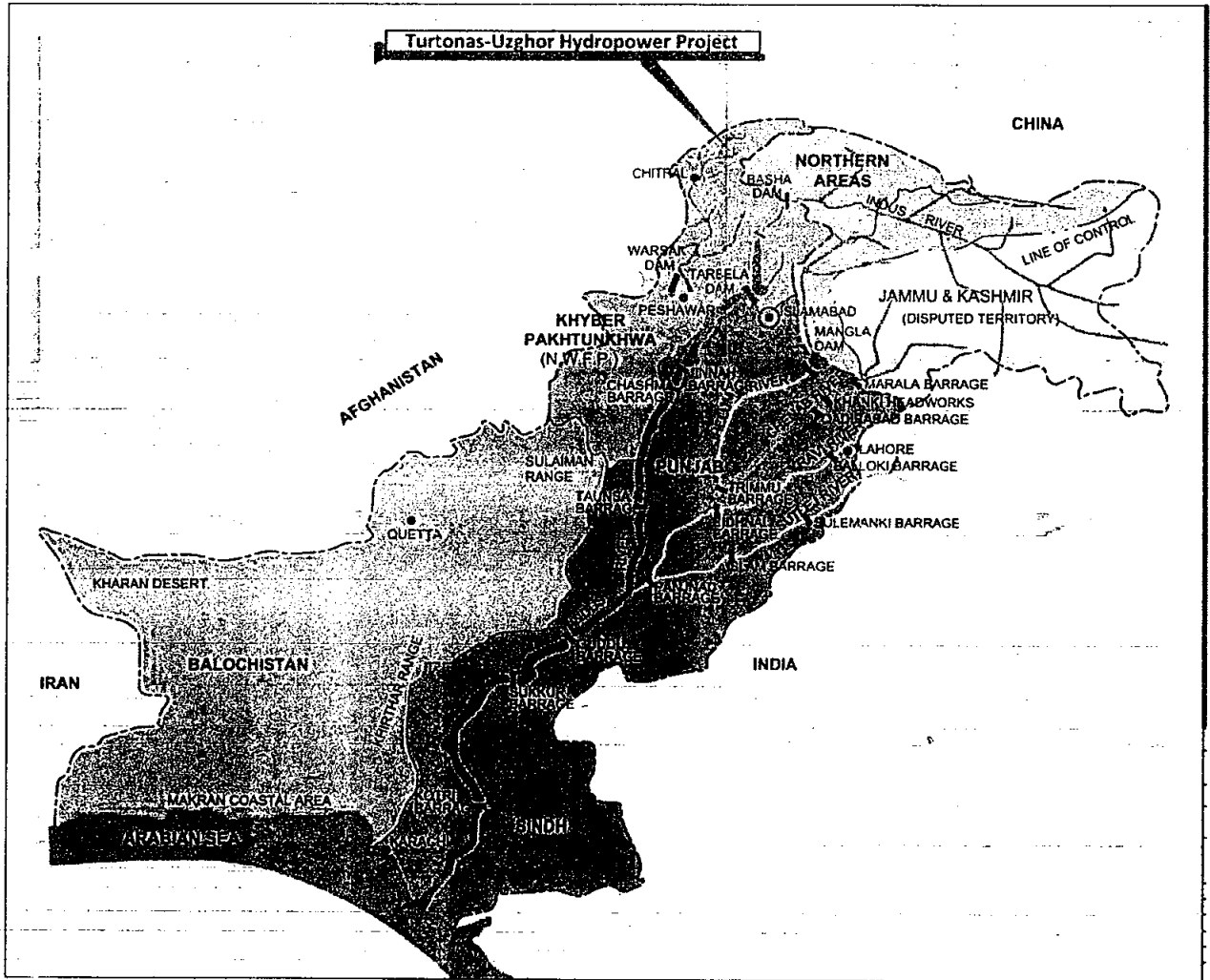
SCHEDULE-I

The Location, Size (i.e. Capacity in MW), Type of Technology, Interconnection Arrangements, Technical Limits, Technical/Functional Specifications and other details specific to the Generation Facilities of the Licensee are described in this Schedule.

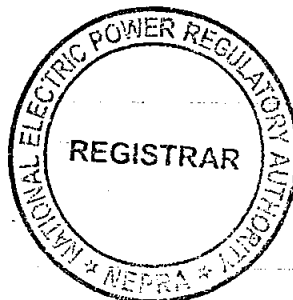


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**Location of the
Generation Facility/Hydel Power Plant of the Licensee
on the Map of Pakistan**

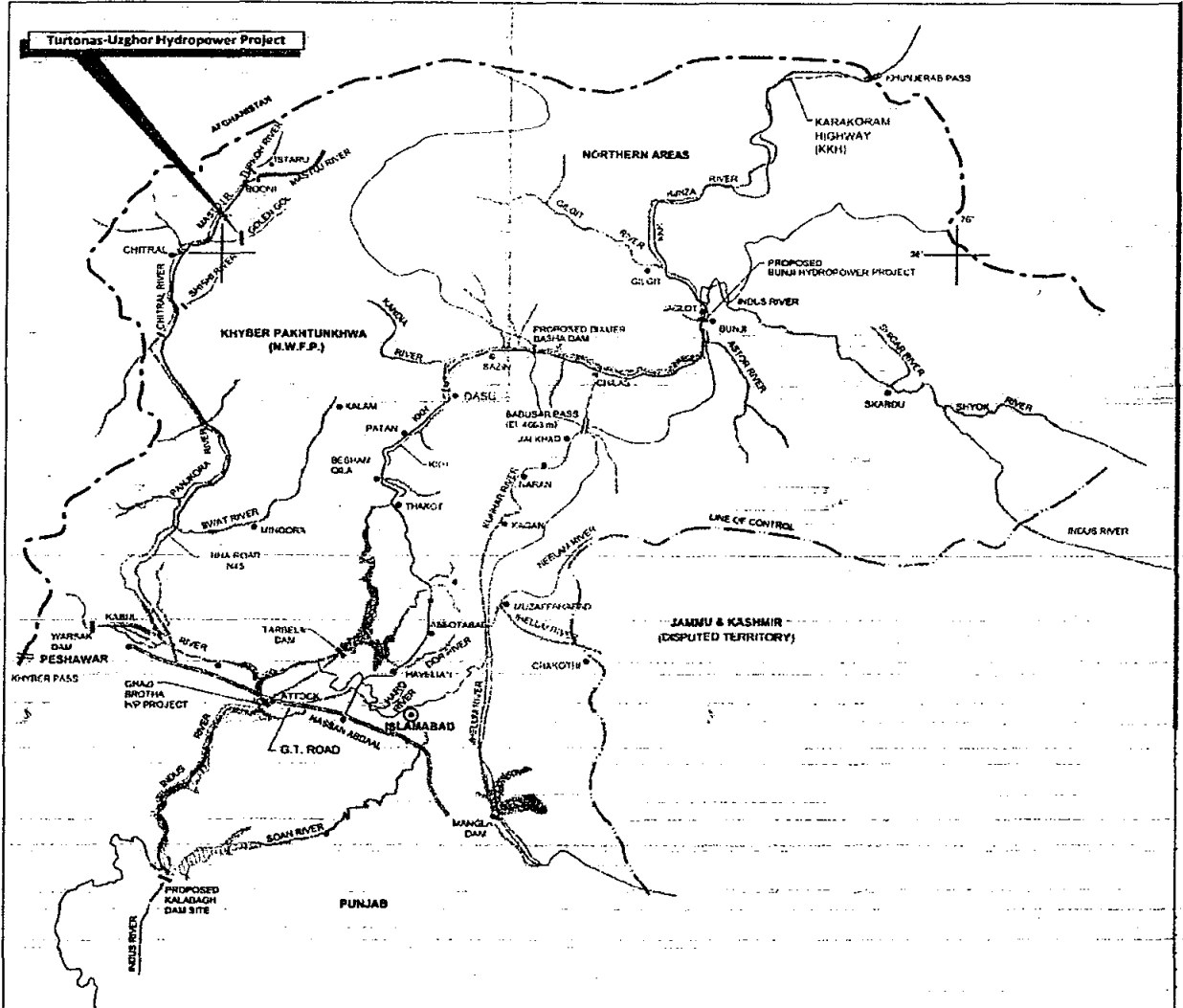


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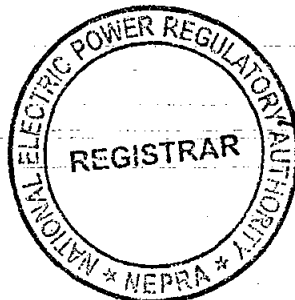


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**Location of the
Generation Facility/Hydel Power Plant of the
Licensee in the Province of KPK**

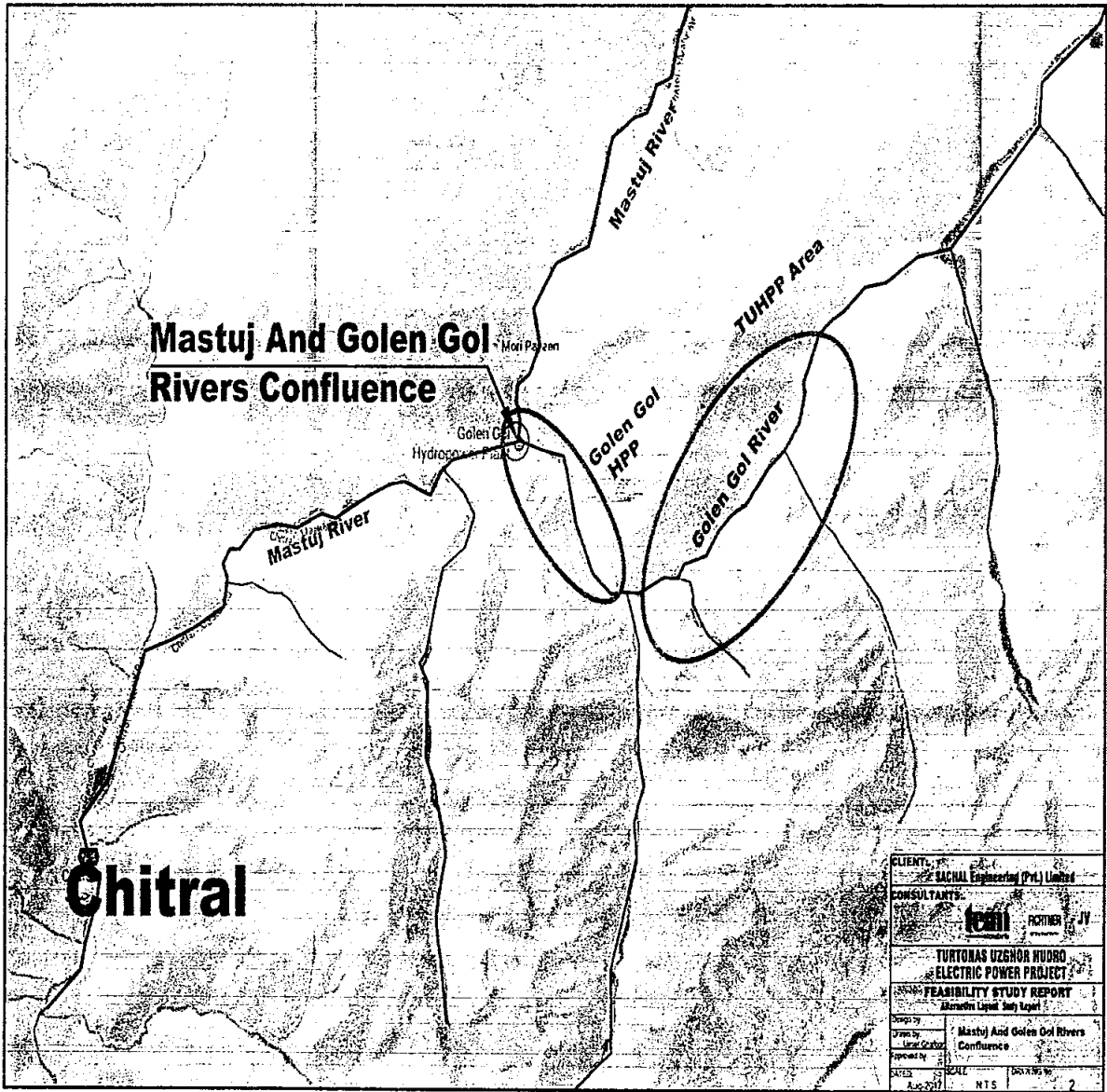


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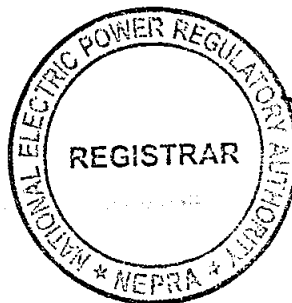


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**Location of the
 Generation Facility/Hydel Power Plant of the Licensee
 In District Chitral of the Province of KPK**



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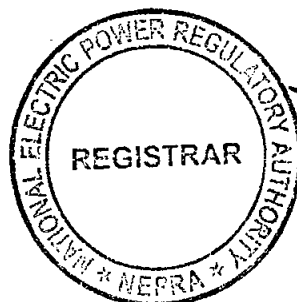
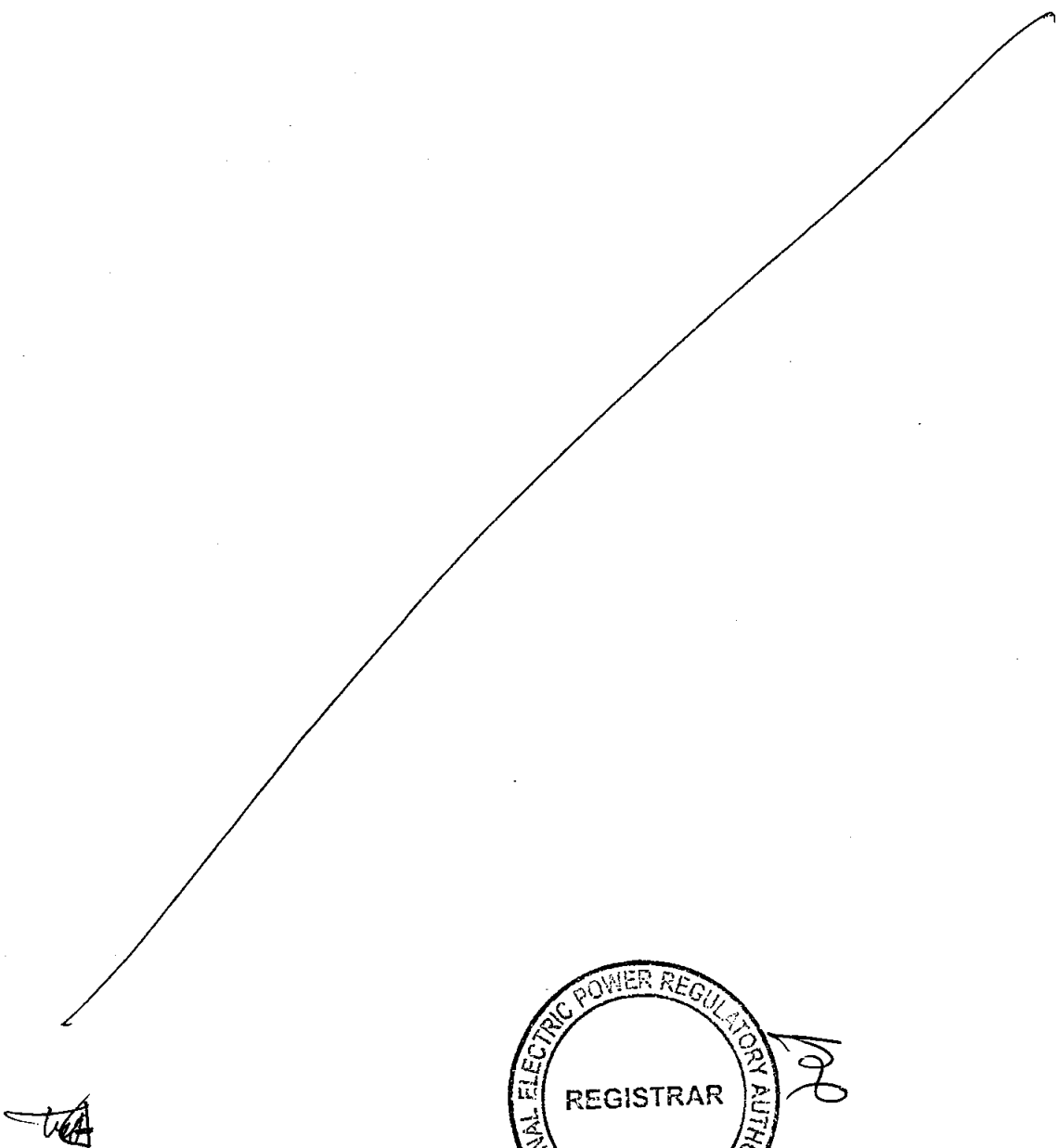


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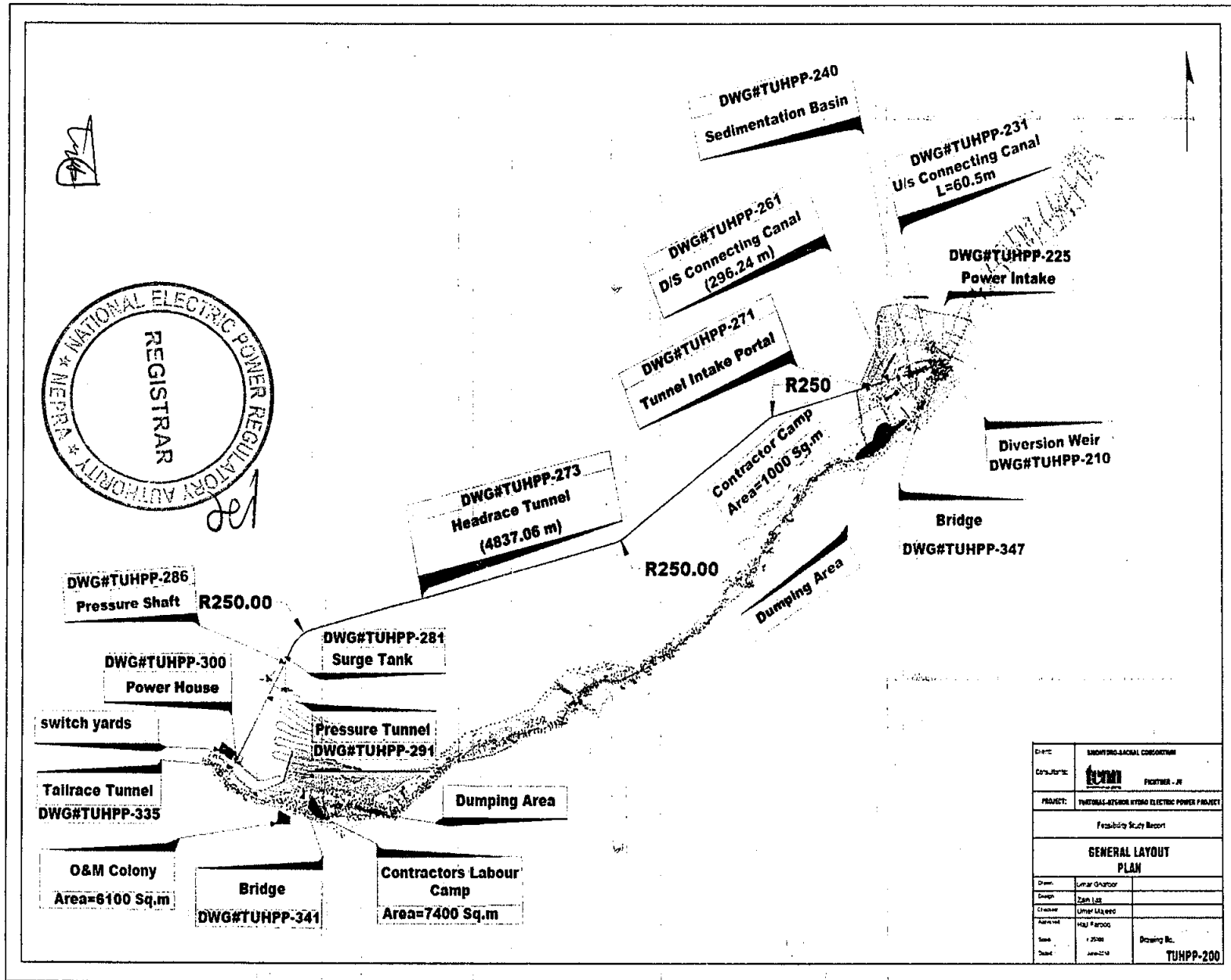
**Land Coordinates of the
Generation Facility/Hydel Power Plant of
the Licensee**

Area	Latitude	Longitude
Weir Intake	35° 56.398'	72° 3.168'
Powerhouse	35° 55' 10.076"	71° 59' 33.661"



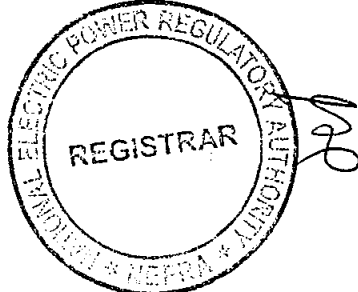
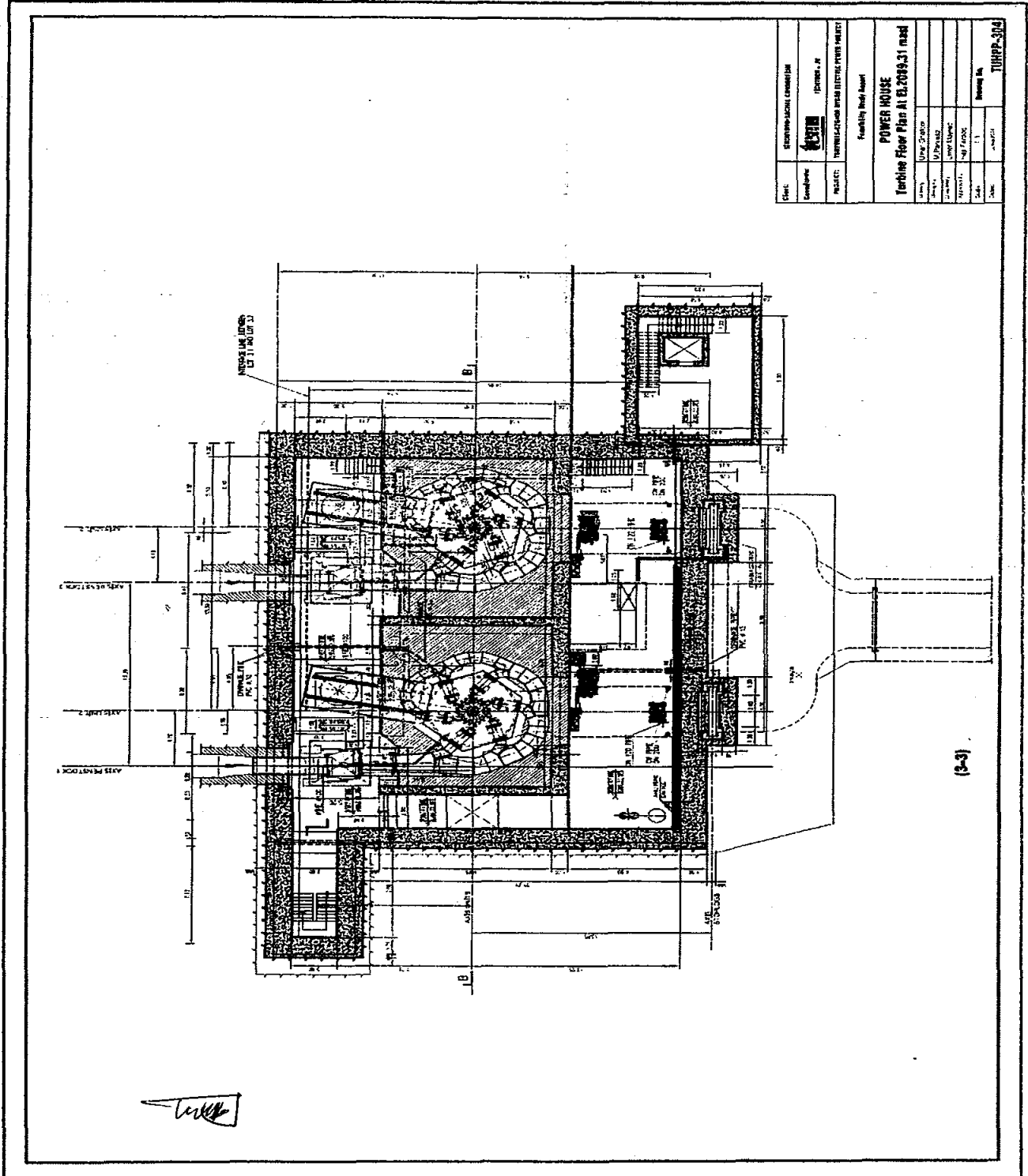
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**Layout of the
Generation Facility/Hydel Power Plant of
the Licensee**



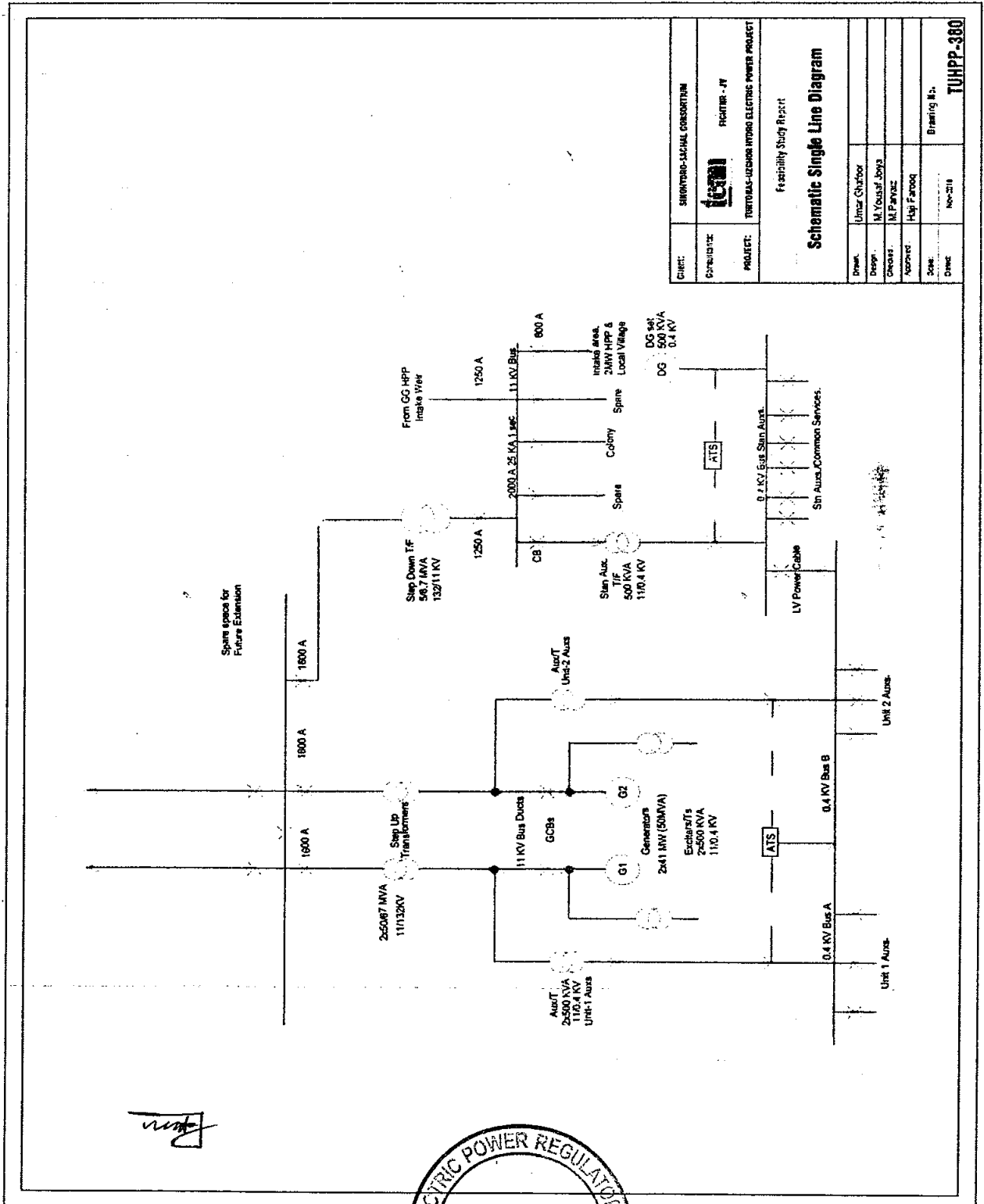
Generation Licence
Uzghor Hydro Power Company (Private) Limited
Turtunas-Uzghor Hydel Power Plant
On Golden Gol River, District Chitral
in the Province of Khyber Pakhtunkhwa

**Powerhouse of the
 Generation Facility/Hydel Power Plant of
 the Licensee**

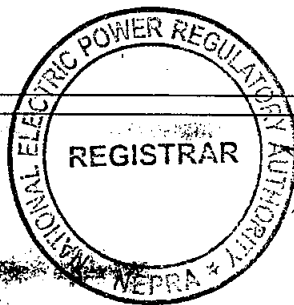


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**Single Line Diagram (Electrical) of the
 Generation Facility/Hydel Power Plant
 Of the Licensee**



Client:	SHEKHOR-SACHAL CONSORTIUM
Consultant:	FECHER - JV
Project:	TURTONAS-UZGHOR HYDEL ELECTRIC POWER PROJECT
Feasibility Study Report	
Schematic Single Line Diagram	
Drawn:	Imraz Chaytor
Design:	M. Yousof Jony
Checked:	M.P. Farooq
Approved:	Haji Farooq
Date:	Nov-2011
Sheet No.:	Branding No. TUHP-380



**Interconnection Arrangement for
Dispersal of Electric Energy/Power from the Generation
Facility/Hydel Power Plant of the Licensee**

The electric power generated from the generation facility/Hydel Power Plant of the Licensee/Uzghor Hydro Power Company (Private) Limited (UHPCPL) shall be dispersed to the load centre of PESCO.

(2). Regarding interconnection arrangement, the Authority has observed that the hydel project of UHPCPL will be located in district Chitral in the province of Khyber Pakhtunkhwa where a number of hydel projects proposed by different agencies are in various stages of implementation. In this regard, the dispersal of electric power from the proposed projects is to be considered in a consolidated manner instead of an individual project. In this regard, PEDO is in process of getting conducted the power evacuation studies for the hydel projects to be located in Chitral corridor for which hiring of consultant is in advance stage.

(3). In view of the above, the Authority while considering the fact that the company cannot carry out the required study on individual basis directs UHPCPL to apply for modification in its generation licence once Grid Interconnection Study is finalized and approved by the relevant agency.



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Detail
of Generation Facility/Hydel Power Plant
of the Licensee

(A). General Information

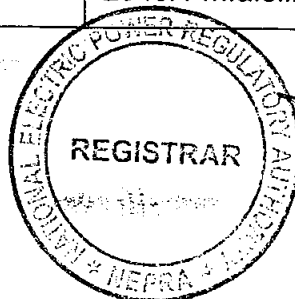
(i).	Name of the Licensee/ Company	Uzghor Hydro Power Company (Private) Limited
(ii).	Registered/Business Office of the Licensee/ Company	59-E, Street No. 07, Sector I-10/3, Islamabad
(iii).	Location of the Generation Facility	Near village of Kaghozi, District Chitral in the Province of Khyber Pakhtunkhwa
(iv).	Type of Generation Facility	Run of River Hydrel Power Plant

(B). Hydrology

(i).	Name of River	Golen Gol
(ii).	Catchment area	518 km ²
(iii).	Full Reservoir Level (FRL)	2582 m.a.s.l.
(iv).	Mean Monthly Flows	7.67 m ³ /s to 31.94 m ³ /s
(v).	Design Flow (Q ₃₀)	20 m ³ /s for power yield
(vi).	Flood Discharge (Q ₁₀₀ year)	693 m ³ /s
(vii).	Peak Flood Discharge	1334 m ³ /s
(viii).	Design Flood Discharge (Q ₁₀₀₀ years)	1025 m ³ /s

(C). Diversion Dam

(i).	Type	Free flow ogee type Weir
(ii).	Design Flood Elevation	2546.1 m.a.s.l.



(iii).	Ogee Crest Elevation	2582 m.a.s.l.
(iv).	Total Height of Weir	8.3 m
(v).	Length of overflow section	40.0 m
(vi).	Height of overflow section	8.3 m
(vii).	Size of Stilling Basin	43 m X 40 m
(viii).	Design flood (Q ₁₀₀₀ years)	1025 m ³ /s
(ix).	Bridge Length	20.65 m
(x).	Access Road Length	16243 m

(D). Gated Section

(i).	No. of Under Sluices	02 No.
(ii).	Size of each Under Sluice	5 m x 9.40 m
(iii).	Nos. Of piers	03

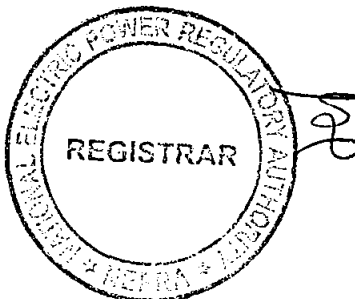
(E). Intake

(i).	Type	Lateral intake – Gate controlled
(ii).	Gate size	3.8 x 3.88 m
(iii).	Nos. of gates	02

(F). Upstream Connecting Canal

(i).	Canal Length Length	60.5 m
(ii).	No. of Conduit	1 No.
(iii).	Conduit Size	60.5 m x 9.5 m

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no.

(G). Sand Trap

(i).	Size of Sand Trap	161 m x 25 m
(ii).	Nos. of chambers	3 Nos.
(iii).	Particle size to be settled	0.2 mm

(H). Connecting Channel Canal

(i).	Length	296 m
(ii).	Nos. of Canal	01 No.

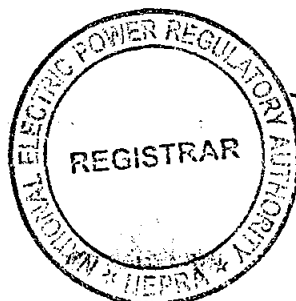
(I). Headrace Tunnel

(i).	Length	4837 m
(ii).	Type	Horseshoe, Surface shotcrete
(iii).	Diameter	4.0 m
(iv).	Tunnel slope	0.3%
(v).	Tunnel invert level	2572.44 m.a.s.l

(J). Surge Shaft

(i).	Height	46 m
(ii).	Type	Circular, Reinforced concrete lined
(iii).	Diameter	15 m
(iv).	Access Road Length	5656 m







(K). Pressure Shaft

(i).	Type	Steel
(ii).	Length	440.1 m
(iii).	Diameter	2.5 m
(iv).	Thickness	Varies

(L). Pressure Tunnel

(i).	Type	Steel
(ii).	Length (2.5m Dia)	791 m
(iii).	Thickness	Varies

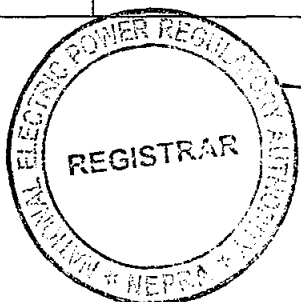
(M). Tailrace

(i).	Type	Rectangular concrete channel
(ii).	Length	75 m

(N). Power Facilities

(i).	Powerhouse	Open Powerhouse
(ii).	Dimensions	69.3 m X 34.355 m X 33 m (L x W x H)
(iii).	Gross Head	494.1 m
(iv).	Net Head	477.1 m
(v).	Installed capacity	82.25 MW
(vi).	No. of units	2 Nos.
(vii).	Type of Turbine	Pelton
(viii).	Turbine Capacity (each)	41.125 MW (10 m ³ /sec)

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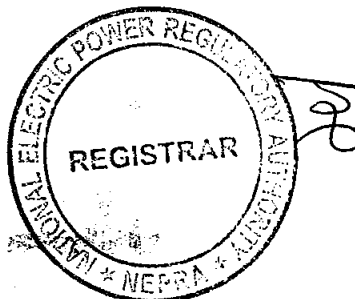
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(ix).	No. of Generators	2 No.
(x).	Generator Capacity (each)	41.125 MW
(xi).	Power factor	0.85
(xii).	Average annual energy	382.33 GWh
(xiii).	Plant Factor	53.06 %

(O). Other Information

(i).	COD of the Generation Facility/Hydel Power Plant	January 01, 2025 (Anticipated)
(ii).	Expected Minimum Useful Life of the Generation Facility from COD	30 Years

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SCHEDULE-II

The Total Installed Gross ISO Capacity (MW), De-Rated Capacity At Reference Site Conditions (MW), Auxiliary Consumption (MW) and the Net Capacity At Reference Site Conditions (MW) of the Generation Facility/Hydro Power Plant of Licensee is given in this Schedule

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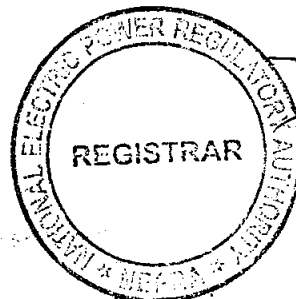
SCHEDULE-II

(1).	Total Installed Gross Capacity of the Generation Facility/Hydel Power Plant (2 x 41.125 MW Pelton Turbines)	82.25 MW
(2).	Total De-Rated Capacity of the Generation Facility/Hydel Power Plant at Mean Site Conditions (2 x 41.125 MW Pelton Turbines)	82.25 MW
(3).	Auxiliary Consumption of the Generation Facility/Hydel Power Plant (2 x 0.41125 MW Pelton Turbines)	0.8225 MW
(4).	Net Capacity of the Generation Facility/Hydel Power Plant at Mean Site Conditions Condition (2 x 0.41125 MW Pelton Turbines)	81.4275 MW

Note

All the above figures are indicative as provided by the Licensee. The Net Delivered Energy available to Power Purchaser for dispatch will be determined through procedures contained in the Power Purchase Agreement (PPA) or the Applicable Document(s).

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