

**National Electric Power Regulatory Authority**  
**Registrar Office**

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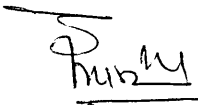
No. NEPRA/R/DL/LAG-03/ 7578

May 10, 2018

**Subject: Determination of the Authority in the matter of the Authority Proposed Modification in the Generation Licence of Northern Power Generation Company Limited (NPGCL) regarding its Steam Power Station, Faisalabad.**

Enclosed please find herewith determination of the Authority (12 Pages) in the subject matter to exclude Units No. 1 – 2 of SPS, Faisalabad from the Generation Licence (No. GL/03/2002 dated July 01, 2002) of NPGCL, for information, record and necessary action.

Enclosure: As above

  
10 05 18  
**(Syed Safer Hussain)**  
Registrar

ADG (Licensing)

Mr. Zainuallah Khatak (for updating the database)

Mr. Rizwan Piracha (to retain the original licence)

Master File [w.r.t. ATC/CM # 4656 dated 09-05-2018]

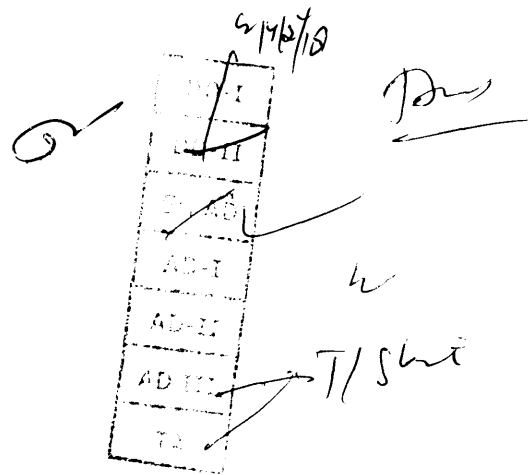
**Information:**

1. Chairman
2. V. Chairman / Member (Consumer Affairs)
3. Member (Tariff)
4. Member (M&E)
5. Member (Licensing)

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1. Senior Advisor (Tariff)-I
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3. Director General (Finance)
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NEPRA  
Licensing Department  
Date: 10.05.18  
Page No: 145-18



# National Electric Power Regulatory Authority Islamic Republic of Pakistan

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**Registrar**

No. NEPRA/R/LAG-03/7574-18

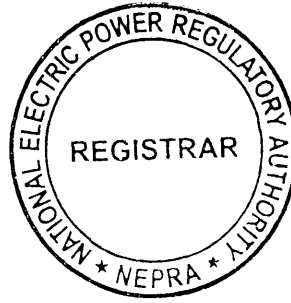
May 10, 2018

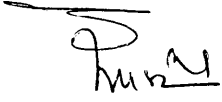
Chief Executive Officer,  
Northern Power Generation Company Limited,  
Mehmood Kot Road,  
TPS, Muzaffargarh.

**Subject: Determination of the Authority in the matter of the Authority Proposed Modification in the Generation Licence of Northern Power Generation Company Limited (NPGCL) regarding its Steam Power Station, Faisalabad.**

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**Enclosure: As above**



  
10 05 18

(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, Faisalabad Electric Supply Company (FESCO), Abdullahpur, Canal Bank Road, Faisalabad.

**National Electric Power Regulatory Authority**  
**(NEPRA)**

**Determination of the Authority**  
**in the Matter of the Authority Proposed Modification in the**  
**Generation Licence of Northern Power Generation Company**  
**Limited Regarding its Steam Power Station, Faisalabad**

**May 10, 2018**  
**Case No. LAG-03**

**(A). Background**

(i). The Authority in terms of Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 (the "NEPRA Act") granted a generation licence (No. GL/03/2002, dated July 01, 2002 modified on April 18, 2014 and October 31, 2014) to Northern Power Generation Company Limited (NPGCL/GENCO-III).

(ii). According to above generation licence, NPGCL has a cumulative installed capacity of 2291.65 which include (a). 1350.0 MW Thermal Power Station Muzaffargarh (TPS Muzaffargarh), (b). 132.00 MW Steam Power Station Faisalabad (SPS Faisalabad), (c). 244.00 MW Gas Turbine Power Station Faisalabad (GTPS Faisalabad) and (d). 565.65 MW Combine Cycle Power Plant Nandipur (CCPP Nandipur).

**(B). Authority Proposed Modification (APM)**

(i). At the time of grant of the generation licence, the remaining useful life of the generating units (2x66 MW steam turbines) of SPS Faisalabad was set to ten (10) years from the date of issuance of the licence which expired on June 30, 2012. In this regard, NPGCL did not apply the Authority for extension of useful live of the said units.

(ii). In this regard, the Authority in its different regulatory meetings deliberated upon the performance of these units and observed that due to lower efficiency of these units and non availability of the primary fuel (i.e. natural gas), the



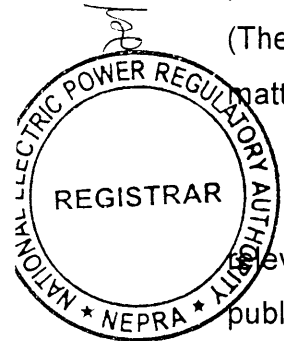
operation of these units on the alternate fuel (i.e. RFO) is becoming very costly to the Central Power Purchasing Agency (Guarantee) Limited (CPPA-G), which is resulting in increased overall basket price making these units uneconomical and unviable for operation".

(iii). In consideration of the above, it was decided to initiate the proceedings of APM to exclude these units from the generation licence of NPGCL. Accordingly, in terms of Regulation-10(1) of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the "Licensing Regulations"), an APM was communicated to NPGCL on December 28, 2015.

(iv). In the text of the proposed APM it was stated that the existing Schedule-I & II of the generation licence of NPGCL indicating Unit No. 1-2 of the SPS Faisalabad as generating units, would be replaced with new/modified Schedule-I & II excluding these units from the generation licence. In statement of the reasons in support of the modification, it was mentioned that the Unit No. 1-2 of SPS Faisalabad have natural gas as the primary fuel and residual furnace oil (RFO) as alternative fuel. Due to non availability of the natural gas, Unit No. 1-2 of SPS Faisalabad are operated using RFO. The efficiency of these units has reportedly dropped to 20% which is very low as compared to other generation facilities operating/having efficiency of around 39%. Due to the said, these units are ranked at the bottom of the Merit Order lying at 73<sup>rd</sup> position in a list of seventy three (73). The generation of electricity from the aforementioned units is costing CPPA-G an approximate cost of Rs. 24.9445/kwh which is resulting in an increased consumer end tariff making these units uneconomical and unviable for operation".

(v). In order to inform the general public and other stakeholders, as required under the Regulation-10(4) of the Licensing Regulations, the Registrar published a notice of the APM in one (01) English and one (01) Urdu newspaper (The News and Express), on December 30, 2015 inviting their comments in the matter within a period of fourteen (14) days from the publication.

(vi). Apart from the above, through letters dated December 31, 2015 relevant stakeholders were also informed about the communication of the APM and publication of its notice in the press. Further, the said stakeholders were directed to submit their views and comments to assist the Authority in the matter.

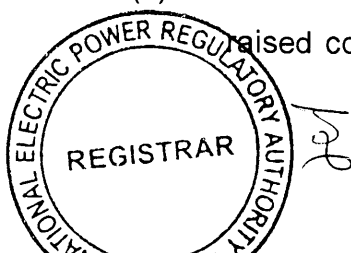


**(C). Comments of Stakeholders Regarding the APM**

(i). In response to the above APM, NPGCL through its letter dated February 12, 2016 did not agreed to the communicated APM. In this regard, NPGCL submitted that in order to enhance the performance the units of SPS Faisalabad, HP heaters of both the units have been replaced and partial re-tubing has been carried out. Further, overhauling of turbine governor carried out in 2012. During recent operation, the average efficiency of the units of SPS Faisalabad was 26%. The exact ranking of SPS Faisalabad in the merit order is 66<sup>th</sup> on gas fuel which is higher than many newly installed IPPs like HUBCO Narowal, SABA, Sapphire Electric, Saif, Halmore and SEPCOL etc. Regarding high per unit cost of generation of SPS Faisalabad, NPGCL submitted that the actual cost of these units was Rs. 9.98 on RFO during the recent operation, which is with accordance with GOP Power Policy 2013 to bring the cost of electricity from Rs. 14/kwh to Rs. 10/kwh. This per unit cost would have even more cheaper if these units are allowed to be operated on gas on continual basis. Further, operation of these units is economical and viable because of lower operational cost. Regarding, low plant factor, NPGCL submitted that these units are run by NPCC when gas is available. Moreover, NPGCL submitted that pursuant to the restructuring plan approved by the Council of Common Interest (CCI) in 1993, NPGCL has an in-built legacy of employees. The manpower transition under the restructuring plan continued within NPGCL during which the terms and conditions of the employees were secured by law. These employees have a legal and contractual safeguard to their employment, at least till age of superannuation. Even the Decommissioning of plant cannot invalidate their appointment rather at the minimum, owing to the stated affairs, NPGCL has to bear their cost and could neither enter into downsizing nor afford unwanted long litigation particularly when the numbers of working employees are far below the then sanctioned strength.

(ii). Further, in response to the notice of APM published in the press, the Authority also received comments from only one stakeholders i.e. Anwar Kamal Law Associates (AKLA) which are summarized in the following Paragraph:-

(a). AKLA in its comments supported the APM. However, AKLA raised concerns regarding delay in initiating the APM, expiry of



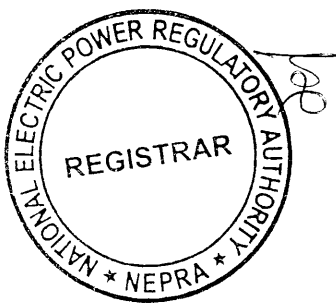
useful life of different generating units, under-utilization of available power plants its adverse impact in the form of increased per unit cost to the consumers despite the fact that demand of power exists in the system. Further, AKLA also objected the making capacity payment to power producers without taking power from them.

(iii). The Authority examined the above comments of AKLA and response of NPGCL and observed that the licensee/NPGCL did not agree to the communicated APM. Therefore, the Authority decided to convene a public hearing in the matter, as stipulated in Regulation-10(6) of the Licensing Regulations,

**(D). Public Hearing**

(i). In view of the above, the public hearing was scheduled for July 13, 2016. Accordingly, the following issues were framed for the said public hearing:

- (a). Whether the operation of Unit 1&2 of SPS Faisalabad is justified after useful life which expired on June 30, 2012 and in absence of extension in the term of Licence (for the said units) as envisaged in Rule-5(2) of the NEPRA Licensing (Generation) Rules, 2000 (the Generation Rules)?
- (b). Why did the licensee (NPGCL/GENCO-III) not apply for extension in the useful life of Unit 1&2 of SPS Faisalabad, if it considers that these plants can be operated for a further period?
- (c). Whether generation from these units is economically viable and in the interest of consumers?
- (d). Whether retaining these units with low utilization factor merits?
- (e). According to the State of Industry Report 2015, various units of GENCO-III have remained off-bar since long due to their poor efficiency levels. The overall net efficiency of GENCO-III is also very low at 24.84%. Furthermore, due to various maintenance

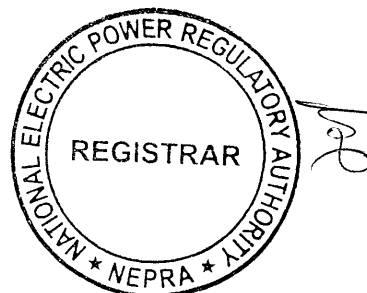


issues, forced outages and fuel constraints etc. resulting in annual capacity utilization of 38.44%. Whether the overall performance of GENCO-III is satisfactory in terms of aforementioned reasons/constraints?

- (f). Whether NPGCL/GENCO-III has taken measures to rehabilitate these units and to make their operation economically viable? What will be the effect of the planned rehabilitation (if any), in terms of efficiency, unit cost and remaining useful lives of these units?
- (g). What has been the impact of the import of Re-gasified Liquefied Natural Gas (RLNG) on operation of these units? Is allocation of precious resource (RLNG) to these low efficient units justified whereas power plants with higher efficiency are suffering from fuel constraints?

(ii). Regarding the public hearing, a notice was published in the press on June 29, 2016 inviting general public to participate in the public hearing. Further, separate letters were also sent to different stakeholders to inform about the public hearing and to depute well conversant representative(s) to attend the hearing.

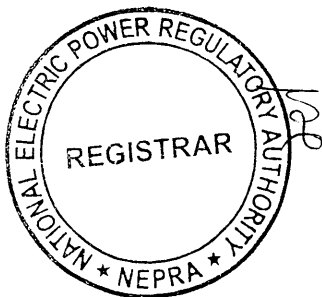
(iii). In response to the above mentioned notice of public hearing, the Authority received comments from AKLA and All Pakistan WAPDA Hydro Electric Workers Union (APWHWU). AKLA reiterated its earlier comments stated that the energy purchase price of these units is very high and their utilization factor is very low. Further, the useful life of these units has already expired and these units have no legal ground to operate beyond their useful lives. Therefore, the APM is supported. However, for any reason, if it is necessary to have these plants in the system, there tariff should be shifted from take or pay to take and pay basis. Whereas APWHWU submitted that the said units of SPS Faisalabad are great asset, contributing about 45 MW to the grid and providing employment. Therefore, in the larger public interest, the life of these units may be extended and gas be made available to them on continuous basis.



(iv). The public hearing was held on July 13, 2016 which was attended by representatives of NPGCL, CPPA-G, GENCO Holding Company Limited, Central Power Generation Company Limited (CPGCL), Ministry of Water and Power (MoW&P), Sui Northern Gas Pipelines Limited (SNGPL), Mari Petroleum Company Limited and other stakeholders and representatives of the general public.

(v). During the public hearing, NPGCL made a presentation before the Authority and presented its point of view on the communicated APM and the issue of hearing stating that:-

- (a). The units of SPS Faisalabad have been upgraded and are operating efficiently. In this regard, the heat rates and efficiency of the SPS Faisalabad determined by the Authority in 2006 have been maintained. The current efficiency of SPS Faisalabad is around 24% which is significantly higher than what has been given in the communicated APM.
- (b). From the date of grant of the licence in 2002 the units of SPS Faisalabad have operated from 6.07(Unit No. 1) years to 6.17 (Unit No. 2) years maximum. Therefore, the units of SPS Faisalabad have remaining useful life/operational life of about four (04) years.
- (c). The generation licence is valid till 2027 and based on the said understanding it did not approach the Authority for the extension.
- (d). The system operator/NPCC operates these units as per the merit order. The current position of SPS Faisalabad is 36 in the overall merit list for the last few months due to operation on gas.
- (e). These units were less utilized by the system operator in the last three years due to unavailability of natural gas despite availability of these units.
- (f). During the months of March, April and May, 2016 when gas was made available, Unit-2 of SPS Faisalabad was operated by the





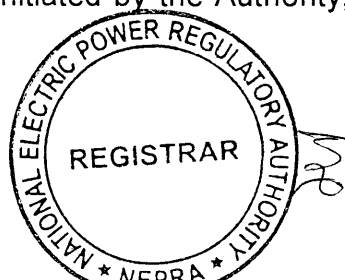
system operator and the utilization factor of this unit remained 48%, 90% and 68% respectively, for the said months.

(ii). In the said hearing, NPGCL also took a stance that generation licence was granted to it in 2002 for a term of twenty five (25) years which is valid till 2027. Subsequently, vide Modification October 31, 2014, the Authority has re-fixed the term of generation licence up to the year 2044 with the addition of Nandipur CCPP Block. So NPGCL understands that legally its generation licence is valid and based on the said understanding it did not approach the Authority for modification of licence with respect to extension in useful life of SPS Faisalabad . However, this aspect was clarified during the hearing that term of generation licence commensurate with the maximum expected useful life of the units of a generation facility. SPS Faisalabad is one set of units along with other units such as GTPS Faisalabad, CCPP Nandipur and TPS Muzaffargarh comprising the generation facilities of NPGCL. Useful life of SPS Faisalabad expired in 2012 and cannot be equated with the remaining term of licence which is based on four power stations. In view of foregoing, the Authority observed that if NPGCL contends that units of SPS Faisalabad have been upgraded and rehabilitated and have the capacity for further operation, it may apply for extension in useful life of SPS Faisalabad through LPM. Later on, NPGCL communicated LPM on September 30, 2016 for extending the useful life of Unit No. 1-2 of SPS Faisalabad for another ten (10) years i.e. upto 2026. LPM is a separate matter which is being dealt under Regulation 10(2) of the Licensing Regulations through separate proceedings.

(i). After the proceedings of the public hearing, the Authority under Regulation-10(9) of the Licensing Regulations published a notice in the press on October 29, 2016 seeking comments regarding the proceedings of the public hearing. However, the Authority did not receive comments from any of the stakeholders.

#### (E). Evaluation/Analysis

(i). The Authority has examined the entire case in detail including the already granted generation licence, the APM initiated by the Authority, response of

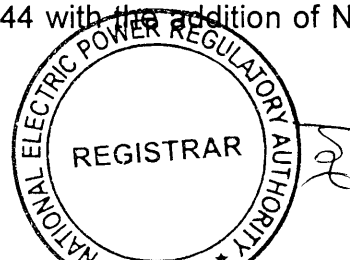


NPGCL, comments of stakeholders, operational data of the units, the framed issues, response of NPGCL on the framed issues and relevant rules and regulations.

(ii). The Authority observes that in terms of Regulation-10(1) of the Licensing Regulations, it is empowered to modify a licence in accordance with an APM. In this regard, Regulation-10(5) of the Licensing Regulations prescribes the criteria to modify a licence through an APM subject to and in accordance with such further changes as it may deem fit if, in its the opinion such modification (a). does not adversely affect the performance by the licensee of its obligations; (b). does not cause the Authority to act or acquiesce in any act or omission of the licensee in a manner contrary to the provisions of the NEPRA Act or the rules or regulations made pursuant to it; (c). is or is likely to be beneficial to the consumers; (d). is reasonably necessary for the licensee to effectively and efficiently perform its obligations under the licence; and (e).is reasonably necessary to ensure the continuous, safe and reliable supply of electric power to the consumers keeping in view the financial and technical viability of the licensee.

(iii). During the public hearing NPGCL made submissions to present its point of view for retaining SPS Faisalabad in its generation licence and the reasons in support of its claim.

(iv). Regarding the issues of expiry of useful life of the generating units of GTPS Faisalabad and failure to apply for extension in useful life of these units, NPGCL submitted that tentatively the useful life of thermal power plant is considered as thirty years. The expected useful life of thermal power plant is based on its efficient operation and safety factors. If properly maintained and timely rehabilitated, these plants can be operated for more than hundred (100) years. Further, from the date of grant of the licence in 2002 the units of SPS Faisalabad have operated for 53,133 hours (Unit No. 1) and 54,050 hours (Unit No. 2) respectively which translate into 6.07 years to 6.17 years maximum, whereas the standby hours do not contribute to the life of units. Therefore, the units of SPS Faisalabad have around four (04) remaining operational years. Further, the generation Licence was granted to NPGCL in 2002 for a term of twenty five (25) years which is valid till 2027. Subsequently, vide Modification October 31, 2014, the Authority has re-fixed the term of generation licence up to the year 2044 with the addition of Nandipur CCPP

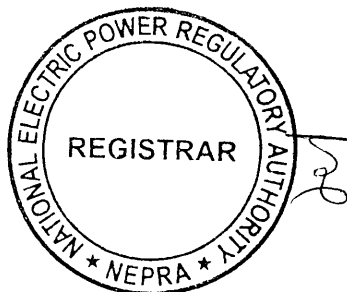


Block. So NPGCL understands that legally its generation licence is valid and based on the said understanding it did not approach the Authority for the extension.

(v). In this regard, the Authority observes that the normal operating life of a steam turbine is taken as 30-35 years based on round the year operation which can be extended based on actual operation hours and proper maintenance. According to the generation licence granted to NPGCL on July 01, 2002, SPS Faisalabad consists of 2x66 MW steam turbines. The steam turbines are of Westing House USA and were installed in 1967. At the time of grant of the generation licence the maximum expected remaining useful life of the said generating units was set to ten (10) years from the date of issuance of the licence, which outlived their useful lives in June 30, 2012. Further, these units are very old and completed about fifty (50) years of operation. In this regard, keeping in view the poor performance of these units and the interests of the consumers and the electric power industry as a whole, the Authority considers that the extension in the useful life of these units is not feasible and operation of these units beyond their licenced useful life cannot be allowed. Further, useful life of SPS Faisalabad expired in 2012 and cannot be equated with the remaining term of licence which is based on the maximum expected life of other generating units included in the generation fleet of NPGCL.

(vi). Regarding the issue of non availability of natural gas/operation of the units on costly alternate fuel (i.e. (RFO) and the impact of the import of RLNG on operation of these units, NPGCL submitted that SPS Faisalabad is less utilized by the system operator despite of availability. These units are only being operated on natural gas on "as and when available" basis. If gas is made available, the utilization factor of these units will be enhanced as observed during the months of March, April and May, 2016 when gas was made available, the utilization factor of SPS Faisalabad considerably high. In this regard, the Authority observes that SPS Faisalabad has natural gas as the primary fuel and RFO as alternative fuel. Due to non availability of the natural gas, the only option for the operation of the said units is the alternative fuel (i.e. RFO) which is very costly. Even if gas is available, its utilization in less efficient plant is not advisable. In view of the said, the Authority considers that the generation from these units is neither economically viable nor it is in the interest of consumers.

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(vii). Regarding the lower position of these units in the merit order, NPGCL has submitted that the exact ranking of units of SPS Faisalabad is 36<sup>th</sup> on gas fuel as per merit order issued by NTDC in May 2016, which is higher than many newly installed IPPs. In consideration of the said, the Authority has observed that SPS Faisalabad consists of two steam turbines which are oldest in the system and are of very low efficiency resulting in high per unit generation cost. Even if operated on natural gas, the ranking of these units in the merit order is very low. Further, the use scarce resources like natural gas with very low efficiency of 20-26% is not justified therefore, these units are not viable for operation any more.

(viii). Regarding the issue of less utilization factor the units of SPS Faisalabad, NPGCL submitted that these units were less utilized by the system operator in the last three years due to unavailability of natural gas despite availability of these units. However, during the months of March, April and May, 2016 when gas was made available, Unit-2 of SPS Faisalabad was operated by the system operator and the utilization factor of this unit remained 48%, 90% and 68% respectively, which is very high as compared to the utilization factor of solar power plants which is less than 30%. In this regard, the Authority observes that one of steam turbines (i.e. Unit No. 1) of SPS Faisalabad is out of operation for the last many years. Further, review of the E-Forms (which provide information regarding the operational performance of the units) submitted by NPGCL on monthly and annual basis and reveal that the utilization factor of Unit No. 2 of SPS Faisalabad also remained very low for the FY-2014-15, FY-2015-16 and FY-2016-17.

(ix). On the issue of lower efficiency of the generating units of SPS Faisalabad, NPGCL submitted that the said units have been upgraded and rehabilitated and being operated efficiently. The heat rates and efficiency of the SPS Faisalabad were determined by the Authority in 2006. The same has been maintained through the utmost efforts. The efficiency of SPS Faisalabad is around 24% which is well above the efficiency fixed by the Authority. In this regard, the Authority has observed that the designed efficiency of these units was 32.06%, the net efficiency approved by the Authority in 2006 was 23.75% and the revised net efficiency approved by the Authority in the tariff determination dated January 22, 2016 is 26.30%. Against the said efficiency, Unit No. 1 of SPS Faisalabad is out of operation

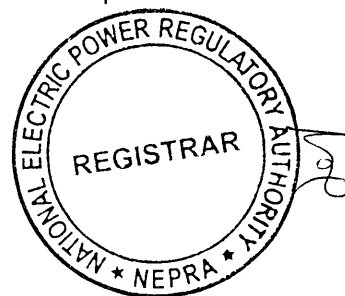
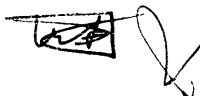


for the last many years. Whereas, the reported net efficiency of the Unit No.2 is also lower than the efficiency approved by the Authority.

(x). Regarding, the issue of rehabilitation of the of the generating units of GTPS, Faisalabad, NPGCL submitted that the units of SPS Faisalabad have been upgraded and rehabilitated by replacement of HP heaters in 2012, re-tubing of boilers and overhauling of turbine governor. Further, the heat rates and efficiency of the SPS Faisalabad determined by the Authority in 2006 have yet been maintained by the utmost efforts of the NPGCL team. Further, other plants of NPGCL have also been rehabilitated for efficient operation. In this regard, the Authority has observed that after expiry of the useful life in 2012, no proper rehabilitation, up-gradation or major overhauling has been carried out to make the units of SPS Faisalabad feasible for further operation except some partial work which has not contributed to any efficiency gain. Further, as mentioned above, Unit No. 1 of SPS Faisalabad is out of operation for the last many years.

(xi). In order to further asses the matter, the Authority also carried out detailed unit wise performance analysis of SPS Faisalabad based on the parameters of efficiency (designed, approved and reported/actual), unit make/model, utilization factor, load factor, availability factor, per unit cost, availability of fuel/fuel constraint, energy produced throughout the years under consideration, previous performance of the units, rehabilitation carried out, optimal use of scarce resource, useful life of the units as per the generation licence, remaining life of the units based on operational hours, possibility of extension in term of the units, number of employees etc. In order to ascertain the physical condition of SPS Faisalabad, a site visit was also carried out by the professionals of the Authority along with Member Licensing.

(xii). In consideration of the above, the Authority concluded that the Unit No. 1-2 of SPS Faisalabad are operating quite below their designed efficiency as well as the net efficiency determined by the Authority. Further, due to non availability of natural gas, SPS Faisalabad is mostly not operative or required to be operated on alternate fuels (i.e. RFO), which makes these plant un-economical due to higher per unit cost.




(xiii). Foregoing in view, the Authority considers that the operation of Unit No. 1-2 of the SPS Faisalabad is technically and economically not viable therefore the same may be excluded from the generation licence of NPGCL.

**(H). Decision of the Authority**

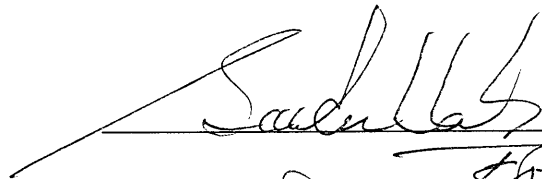
In view of the above analysis, the Authority hereby decides to exclude Unit No.1-2 of SPS Faisalabad from the generation licence of NPGCL and the generation licence (No. GL/03/2002 dated July 01, 2002) accordingly stands modified. For the changes made in the generation licence through this APM and other parallel proceedings, the annexure attached to the determination of the Authority dated May 02, 2018, in the matter of LPM of NPGCL may be referred. The approval of the APM is subject to the provisions contained in the NEPRA Act, relevant rules framed thereunder, terms & conditions of the generation licence and other applicable documents.

**Authority**

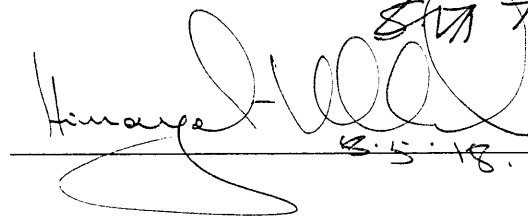
Rehmatullah  
(Member)

  
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Saif Ullah Chattha  
(Member)

  
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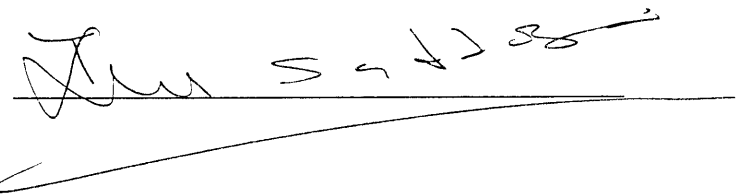
Himayat Ullah Khan  
(Member)

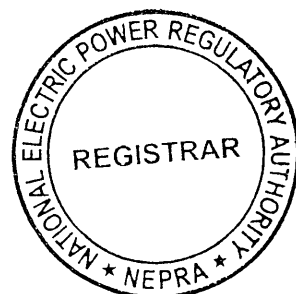
  
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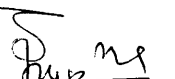
Syed Masood-ul-Hassan Naqvi  
(Member/Vice Chairman)

  
8/5

Tariq Saddozai  
(Chairman)

  
8/5



  
10/05/18