BEFORE

THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY

APPLICATION FOR MODIFICATION OF

GENERATION LICENSE NO. IGSPL/83/2017 DATED JUNE 07, 2017

ON BEHALF OF

THAR ENERGY LIMITED (TEL)

PURSUANT TO REGULATION 9(1A) OF THE NEPRA (APPLICATION, MODIFICATION, EXTENSION AND CANCELLATION) PROCEDURE REGULATIONS, 2021), READ TOGETHER WITH THE REGULATION OF GENRATION, TRANMSIOSION AND DISTRIBUATION OF ELECTRIC POWER ACT ,1997 AND ALL OTHER ENABLING PROVISIONS OF LAW

Dated 07 December 2022

HUBCO
THAR ENERGY LTD.

Thar Energy Limited

09th Floor, Ocean Tower
Block-9, Main Clifton Road
Karachi. Pakistan

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TEL Reference: TEL-NEPRA-SM - 05

December 07, 2022

The Registrar
National Registrar Electric Power Regulatory Authority NEPRA Tower,
Ataturk A venue (East), G-5/1, Islamabad.

Subject: **Application under Regulation 9(1) of NEPRA (Application & Modification Procedure) Regulations, 2021, on behalf of Thar Energy Limited for Modification of its Generation License**

Dear Sir,

I, Saleemullah Memon, being the duly authorized representative of Thar Energy Limited by virtue of Board Resolution dated December 05, 2022, hereby apply to the National Electric Power Regulatory Authority for the modification of our Generation Licence No. IGSPL/83/2017 dated June 07, 2017 (the "Application").

pay order# **04852314** dated 24 November 2022 from Standard Chartered, Karachi Branch in the sum of Rupees Two Million Seven Thousand Nine Hundred Eighteen Only (Rs. 2,007,918/-), being the non-refundable license application fee calculated in accordance with Schedule II to the National Electric Power Regulatory Authority Licensing (Application and Modification Procedure) Regulations, 2021, is also attached herewith.

Best Regards,

Saleemullah Memon
Chief Executive Officer

Enclosed:

1 - Pay order# **04852314** dated 24 November 2022 from Standard Chartered, Karachi Branch.
2 -Affidavit
3 - Extract of Board Resolution
4 - Licence Proposed Modification (LPM) Application
5 - Copy of Generation Licence No. IGSPL/83/2017 dated June 07, 2017

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CERTIFIED TRUE COPY OF THE RESOLUTION PASSED BY CIRCULATION OF THE BOARD OF DIRECTORS OF THAR ENERGY LIMITED DATED DECEMBER 05, 2022

UNANIMOUSLY RESOLVED that the Application for Modification of Generation License No. IGSPL/83/2017" for 330.00 MW indigenous coal based thermal generation facility located at 5.0 KM from Thar Block-II of Thar Coalfields, District Tharparkar, Sindh (the "Application"), is hereby approved for submission by the Company to the National Electric Power Regulatory Authority (the "NEPRA").

FURTHER RESOLVED THAT the Chief Executive Officer, Chief Financial Officer, the Company Secretary or any authorized representative/nominated officer of the Company be and is hereby singly given the mandate and authorized to:

i. review, execute and submit the Application or any other related document, including any contracts, affidavits, statements, documents, powers of attorney, letters, forms, applications, deeds, guarantees, undertakings, approvals, memoranda, amendments, letters, notices, certificates, requests, statements and any other instrument of any nature whatsoever, to NEPRA, for and behalf of the Company, and to proceed with and make any corrections and amendments, if required, in finalizing the Application or any other related document;

ii. attend, represent and participate in all meetings, negotiations, hearings and conferences of whatsoever nature before NEPRA or any other regulatory authority or official or person in connection with the submission and approval of the Application and pay the necessary fees, for and on behalf of the Company; and

iii. do all such acts including but not limited to delegation of any of the powers granted herein to any other director or officer of the Company, singly or jointly, and submit all such documents as may be necessary in respect of the foregoing resolutions.

FURTHER RESOLVED THAT any and all actions of the authorized representative/nominated officer in pursuant to, or in furtherance of the intent and purposes of the foregoing resolution, are hereby in all respects adopted, approved, confirmed and ratified as the valid and subsisting acts of this Company."

Huma Ansari
Company Secretary

Thar Energy Limited Karachi

1 DETAILS OF THE PETITIONER

1.1 Name and Address

Name:	**Thar Energy Limited**
Address:	09th Floor, Ocean Tower Block-9, Main Clifton Road Karachi, 75600, Pakistan
Phone:	+92 21 3587 4677-86 +92 21 3583 9018
Fax:	+92 21 3587 0397

1.2 Particulars of Authorized Representative

Name:	Mr. Saleemullah Memon
Designation:	Chief Executive Officer

1.3 Particulars of Authorized Representative

Thar Energy Limited (the "**Company**") is private limited Company incorporated under the laws of Pakistan and is establishing a 330MW indigenous Thar coal based thermal generation facility located at Thar Coal Block-II, Village Singharo-Bitra in Taluka Islamkot, District Tharparkar, in the province of Sindh.

NEPRA granted the Company Generation License NO. IGSPL/83/2017 DATED JUNE 07, 2017 (the "**Generation License**") under section 15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act ,1997.

2 PROPOSED MODIFICATION

Pursuant to Regulation 10(1) of the 2021 Regulations, Company herby applies for the following modifications to the specification set out in Schedule 1 of the Generation License:

2.1 The ramping rates (MW/min) set out in row V of table F of the schedule 1 of the Generation License (under the heading "Detail of Generation Facility / Power Plant are proposed to be written as follows:

Complex load range % age	Cold Start (% / Min)	Warm Start (%/Min)	Hot Start (% /Min)
≤30%	0.35	0.8	1.00
≥30%	0.35	0.8	1.00

2.2 The time required to Synchronize to the grid (Hrs.) set out in row (VI) of table F of Schedule 1 of Generation License (under the heading "Detail of Generation Facility / Power Plant are proposed to be modified as follows:

Length of Shutdown	**Notice Required to Synchronize (The time start after boiler ignited)**
Not more than 2 hours	100 min
More than 2 hours but less than 8 hours	150 min
More than 8 hours but less than 32 hours	360 min
More than 32 hours but less than 150 hours	550 min
More than 150 hours	770 min

3 STATEMENT OF THE REASON IN SUPPORT OF THE MODIFICATION

The above modifications to Ramping rates and the time periods for Synchronization to the Grid are necessary because these specifications were provided by the Company to NEPRA at the time of filling of the application for grant of its Generation license and were tentative and indicative in nature. Accordingly, these specifications require modification in light of the actual design and requirement of the power plant and the data and instructions provided by the manufacturer to the Company.

Consistent with NEPRA determination in the matter of similar IPPs modification application and Article 3.2 of Generation License, The Company hereby requesting modification of its Generation License in light of actual design of the power plant and the data provided and instruction received by the Company from the manufacturer.

In addition to the above, we set out below the specific reasons for each modification requested by the Company from NEPRA

3.1 Rationale for the modification to Ramping Rates

Modification to the Ramping rates is necessary because:

a. TEL power plant is equipped with a Circulating Fluidized Bed (CFB) boiler and Thar lignite coal combusted. For CFB boiler, the normal ramp rate is no more than 1%Pe/min for Hot startup, 0.8% Pe/min and 0.35% Pe/min for Warm and Cold startup respectively.

b. High moisture lignite coal is combusted, and some residence time required to ensure proper burning. If the Ramping rate is not followed, the circulation and heating of the furnace cannot be ensured, faster ramp rate may cause excess coal feed to furnace in low temperature condition, which may result in localized explosion, ash fusion and clinker formation in Boiler. Therefore, the modification to the Ramp rate, set out in paragraph 2. 1 above, has been proposed to ensure safe and efficient operation of the power plant.

c. Meanwhile, the ramp rate is crucial to ensure proper heating of the Boiler, Steam Turbine, and Steam pipelines to avoid exceed thermal stress. If the Ramping rate is not limited, it may cause an adverse change in the airflow, distribution of coal, and difficulty in achieving thermal &chemical equilibrium for the CFB boiler, which may impact the system parameters like steam pressure, steam temperature etc. adversely. Under these circumstances, the boiler may overheat or leak. Furthermore, heat stress protection on the cylinder metal will be triggered and load ramping will be limited by GE TCS system, or even the operational life span of turbine may be affected.

d. According to Chinese relevant standards, the Ramp rate of CFB unit should be limited no more than 1%Pe/min, to ensure main system parameters are properly under controlled, such as boiler bed temperature, primary air pressure, second air flow, drum level, main steam pressure, main/reheat steam temperature, etc. Ramp rate of TEL Power Plant shall be limited within 1%Pe/min for Hot startup, 0.8% Pe/min and 0.35% Pe/min for Warm and Cold startup respectively.

3.2 Rationale for the modification to the Time required for the Synchronization to the Grid

The following modifications to the time required for the synchronization to the Grid are based on the technical requirements of the manufacturer's technical specification (set out in Annex XX of this Application), and take into consideration the efficient and safe operation of the plant:

More than 150 hours: Total 770 Minutes, wherein, 200 minutes are required auxiliary boiler start and auxiliary steam system warm up, as well as for boiler water purity analysis & adjustment; 420 minutes are required for CFB boiler to setup temperature and pressure after the successful ignition: hot flushing time of 120 minutes in addition to Boiler Startup time to achieve the steam purity is required; Then, 30 minutes are required for synchronize to grid. Therefore total 770 minutes is required for unit startup.

More than 32 hours and less than 150 hours: Total 550 Minutes wherein 420 minutes are required for CFB boiler to setup temperature and pressure after the successful ignition: hot flushing time of 30 minutes is needed; 70 minutes are required auxiliary boiler start and for boiler water purity analysis & adjustment; Then, 30 minutes are required for synchronize to grid. Therefore total 550 minutes is required for unit startup.

More than 8 hours and less than 32 hours: Total 360 Minutes wherein 260 minutes are required for CFB boiler to set up temperature and pressure after the successful ignition; 70 minutes are required auxiliary

boiler and for boiler water purity analysis & adjustment; Then, 30 minutes are required for synchronize to grid. Therefore total 550 minutes is required for unit startup.

More than 2 hours less than 8 hours: Total 150 minutes, wherein 60 minutes required for CFB boiler to set up temperature and pressure after the successful ignition; and steam turbine rolling up to 3000rpm, 60 minutes for auxiliary boiler start and auxiliary steam system warm up, then, 30 minutes is required for synchronize to grid. Therefore, total 150 minutes is required for unit start-up.

Not more than 2 hours: Total 100 minutes, wherein 60 minutes are required for CFB boiler to set up temperature and pressure after the successful ignition;20 minutes is required for steam turbine rush to 3000rpm after admission of steam; Then, 20 minutes is required for synchronize to grid. Therefore, total 100 minutes is required for unit start-up.

Annexure 2-A: Boiler Startup curves
Annexure 2-B: Steam Turbine curves

4 STATEMENT OF THE IMPACT OF THE PROPOSED MODIFICATION ON THE TARIFF, QUALITY OF SERVICE, AND PERFORMANCE OF THE COMPANY OF ITS OBLIGATIONS UNDER THE GENERATION LICENSE

4.1 Impact of the Proposed Modification on the Tariff

The Company has opted for upfront coal tariff, for 1 x 330 MW Coal Power Plant, issued by NEPRA. Since the upfront tariff is a fixed tariff, the proposed modification to the Company's Generation License will have no impact on the tariff.

4.2 Impact of the Proposed Modification on Quality of Service

The Company hereby certifies that the Upfront Tariff and the obligations enunciated in the Generation License are fully acceptable to the Company and that the proposed modification will not impact the quality of service. Rather, the modification is necessary as explained above in order to avoid any impairment in the quality of service.

4.3 impact of the Proposed Modification on the Performance of the Company of Its Obligations under the Generation License

For the reasons explained above, the proposed modification would facilitate the Company in fulfilling its obligations under the Generation License.

It is further submitted that the proposed modification may be accepted as it:

a) does not cause NEPRA to act or acquiesce in any act or omission of the licensee in a manner contrary to the provisions of the Regulation of the Generation, Transmission and Distribution of Electric Power Act, 1997 or the rules or regulations framed thereunder.

b) is beneficial to the consumers as it will ensure safe and efficient operation of the power plant.

c) is reasonably necessary for the Company to perform its obligations effectively and efficiently under the Generation License.

d) 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 Company; and

e) is in accordance with the design requirements of the manufacturer, as certified by the manufacturer.

5 PRAYER

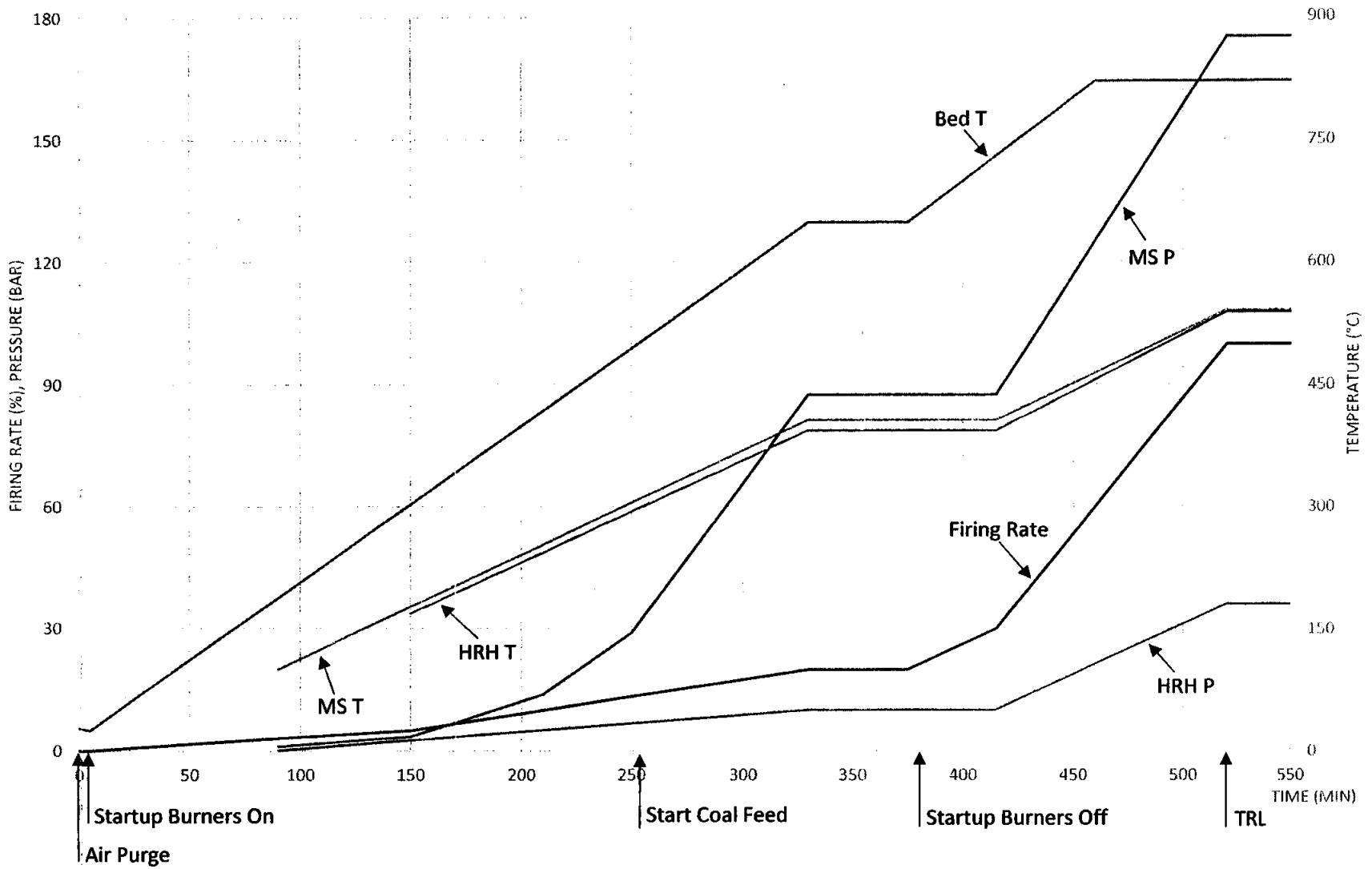
In view of the above, it is hereby most respectfully requested that NEPRA may kindly:

i. accept the proposed modification to the Generation License to ensure safe and /efficient operation of the Company'330 MW power plant,

ii. treat the Company's request for modification to the Generation License on a nondiscriminatory basis; and

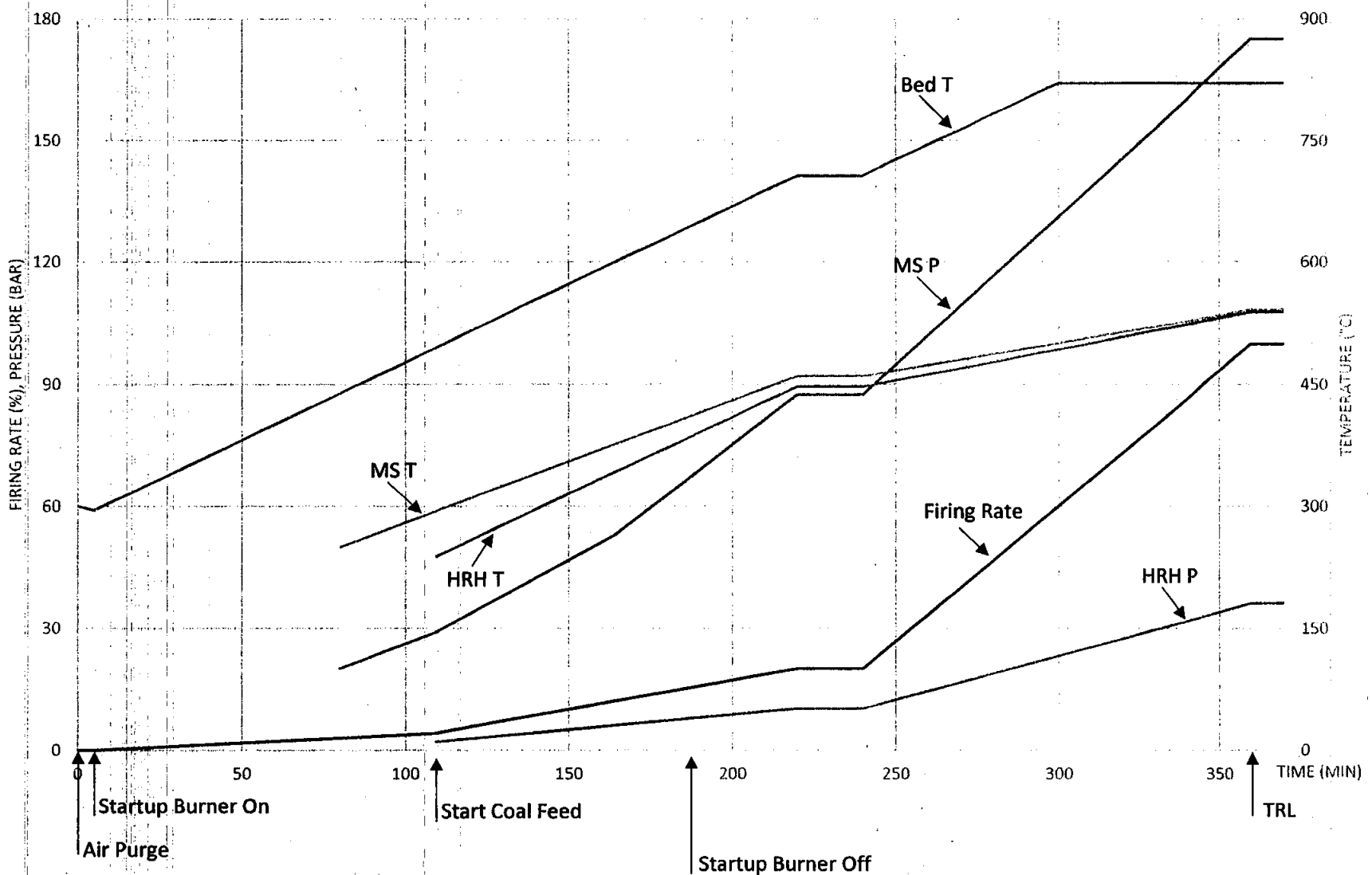
iii. grant such other relief as NEPRA may deem appropriate in the circumstances

TEL Boiler Cold Start-up

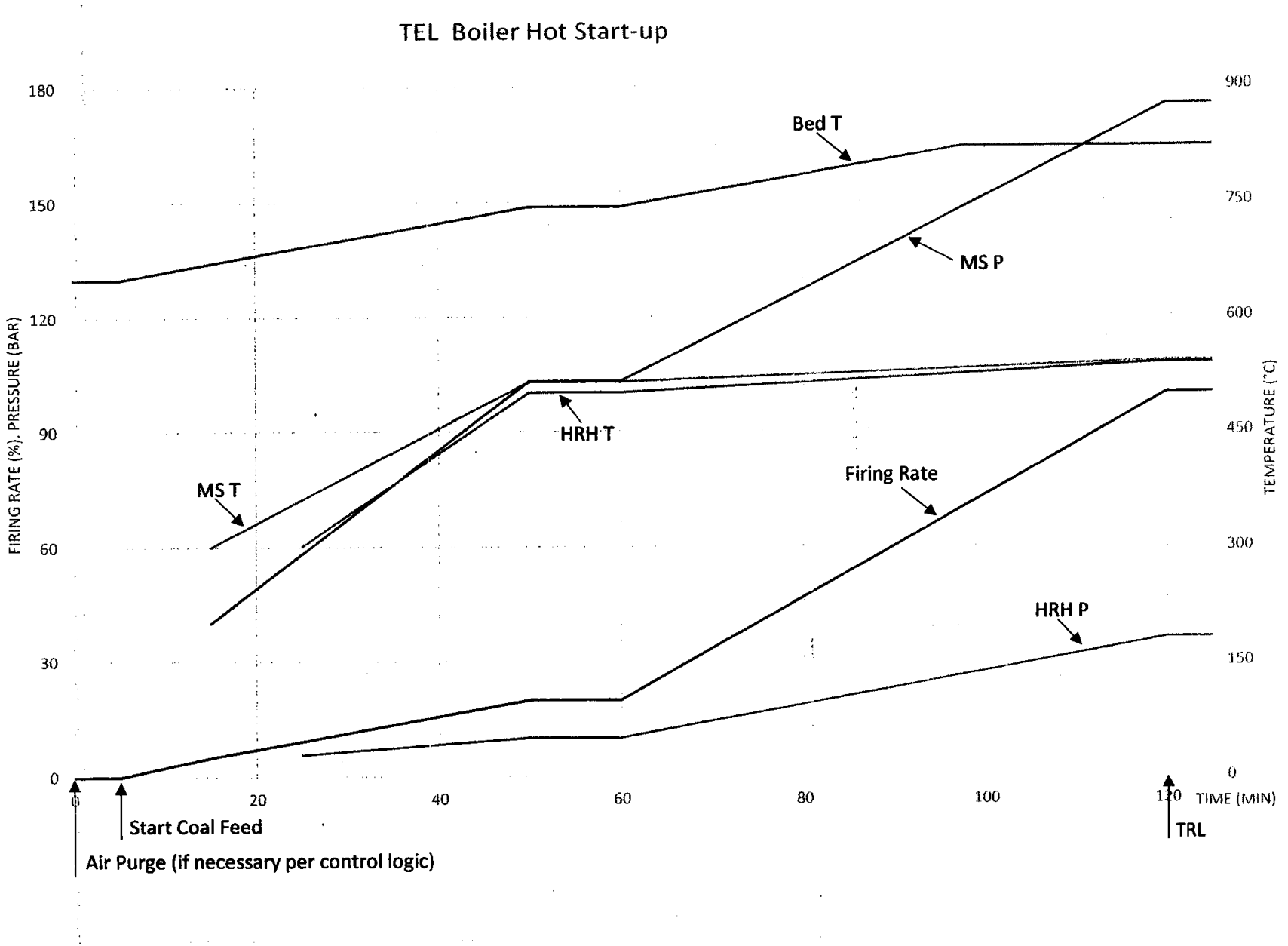


Note:
The bed inventory should be 10~12kPa equivalent before start up.

TEL Boiler Warm Start-up

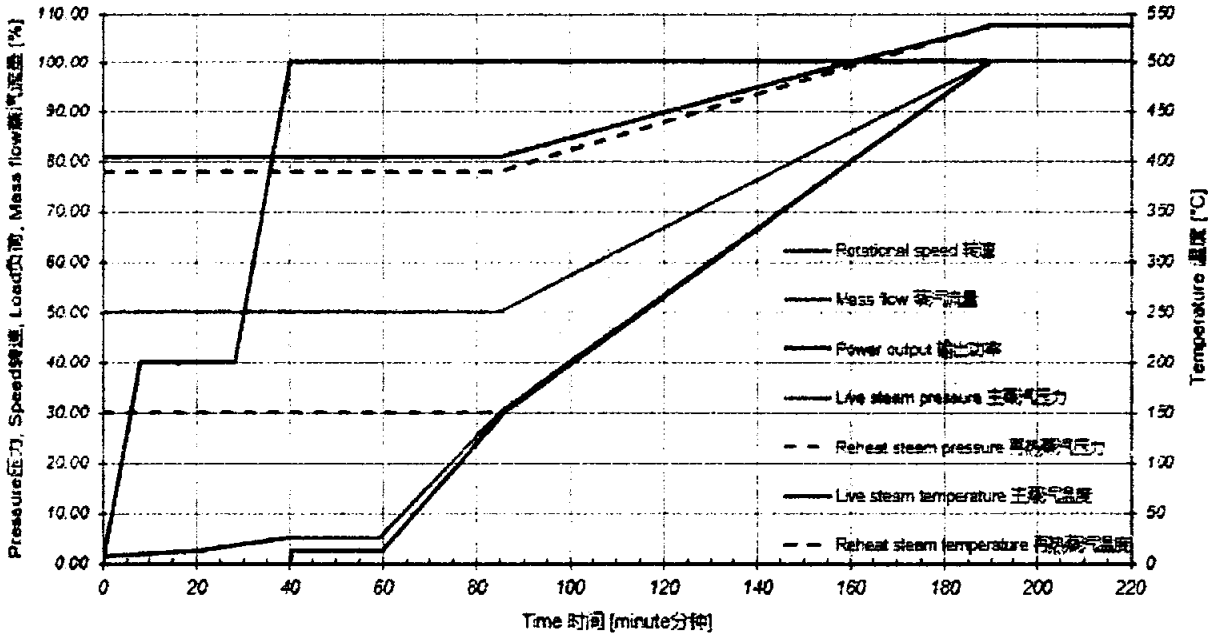


Note:
The bed inventory should be 10~12kPa equivalent before start up.

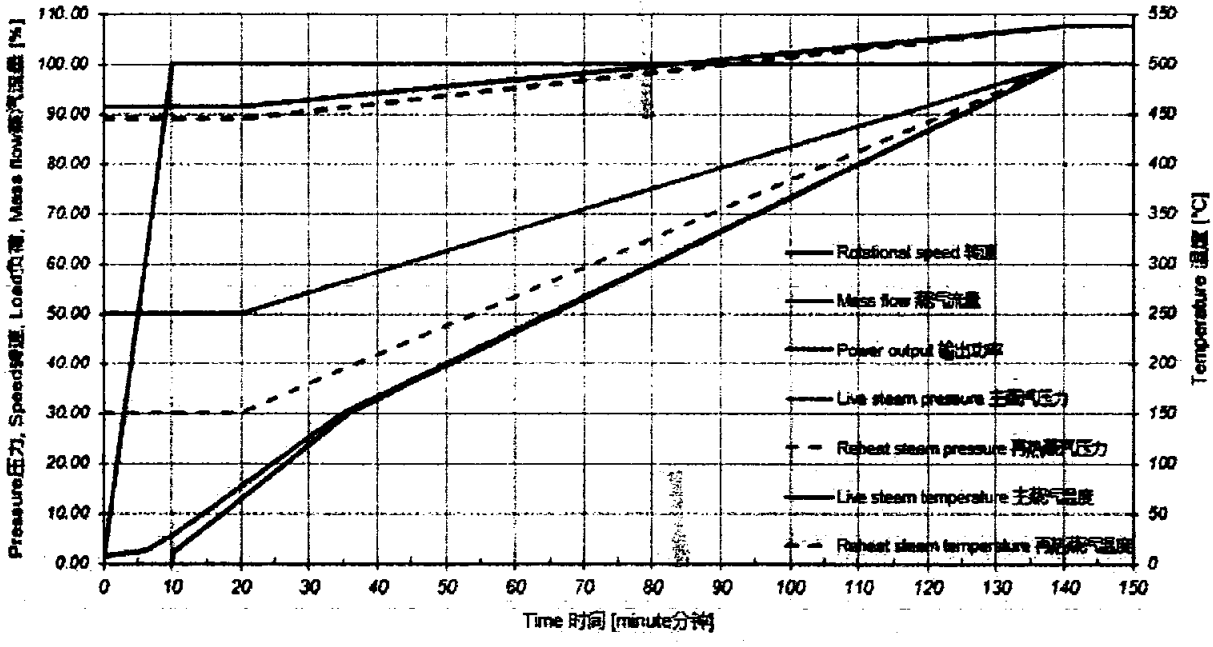


Note:
The bed inventory should be 10~12kPa equivalent before start up.

TEL TURBINE COLD STARTUP



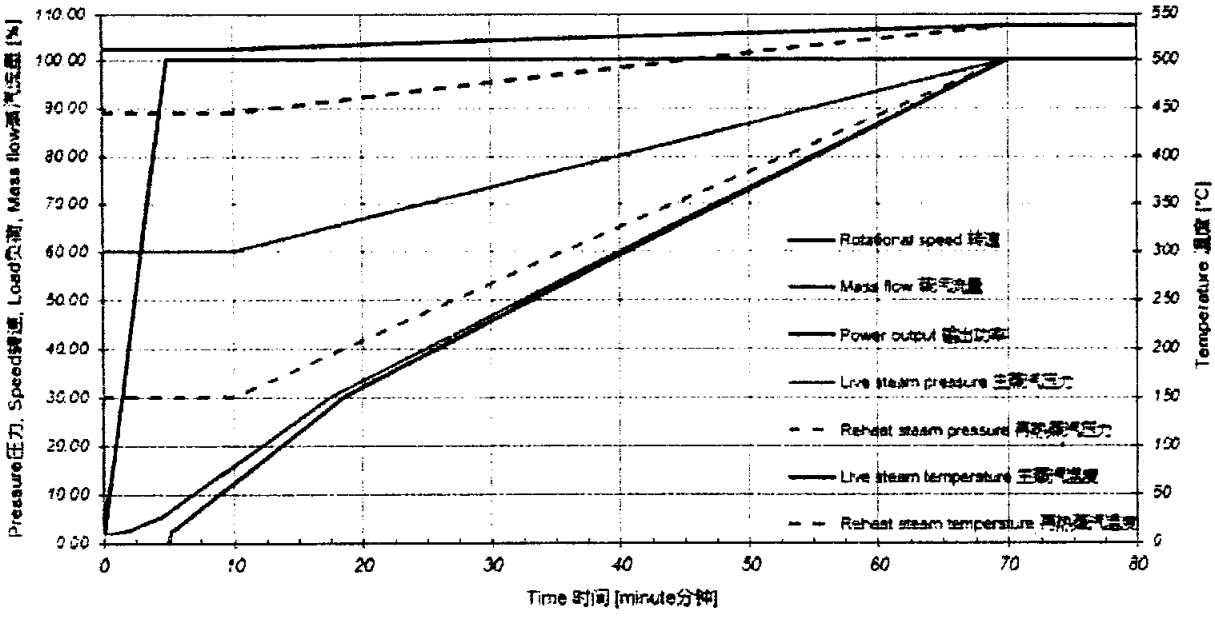
TEL TURBINE WARM STARTUP



Dept.	Document No.	Type	Rev.	Released	Lng.	Status
6505	1BCD400926	TC	A	2021-01-25	EN	Approved

1X330MW GE STEAM TURBINE
STARTUP CURVES

TEL TURBINE HOT STARTUP



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6505	1BCD400926	TC	A	2021-01-25	EN	Approved