



National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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Registrar

No. NEPRA/R/LAG-27/ 86 28-36

September 27, 2011

Director General
Pakistan Atomic Energy Commission
Karachi Nuclear Power Complex
P.O. Box 3183,
Karachi-75400

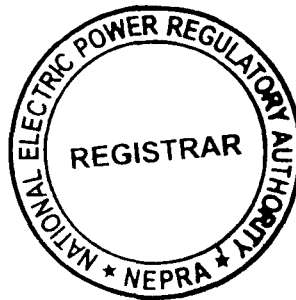
Subject: Modification in Generation Licence No. GL/022/2005, dated 04.03.2005 – Pakistan Atomic Energy Commission for its Karachi Nuclear Power Plant (KANUPP)

Reference: Your letter No. TD-611.4.1, dated December 14, 2010

It is intimated that the Authority has approved "Licensee Proposed Modification" in Generation Licence No. GL/022/2005 in respect of Pakistan Atomic Energy Commission for its Karachi Nuclear Power Plant pursuant to Regulation 10(11) of the NEPRA Licensing (Application & Modification Procedure) Regulations, 1999.

2. Enclosed please find herewith Modification-I in the Generation Licence No. GL/022/2005 attached as Annex-A, as approved by the Authority. Further, the determination of the Authority in the matter is also attached.

Encl:/As above



(Syed Safer Hussain)

Copy to

1. Chairman, Pakistan Atomic Energy Commission, P.O. Box 1114, Islamabad
2. Director General, Pakistan Environmental Protection Agency, House No. 311, Main Margalla Road, F-11/3, Islamabad.

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

Islamabad – Pakistan

GENERATION LICENCE

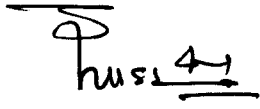
GL/022/2005

In exercise of the Powers conferred upon the National Electric Power Regulatory Authority (NEPRA) under Section-26 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby modifies the Generation Licence granted to **PAKISTAN ATOMIC ENERGY COMMISSION** for its Karachi Nuclear Power Plant (**KANUPP**), issued on March 04, 2005 and expiring on March 03, 2020, to the extent of changes mentioned as here under:-

- (i). **Changes in Face Sheet, Schedule-I and Schedule-II** attached as **Annexure-A**;

This **Modification-I** is given under my hand this **27th** of

September Two Thousand & Eleven



Registrar





**Details of Modification-I to
Generation Licence
No. GL/022/2005, dated March 04, 2005**

The modifications made to Face Sheet, Schedule-I and Schedule-II of the Generation Licence No. GL/022/2005, dated March 04, 2005 are as follows:-

(A). Changes in Face Sheet

- (i). The disclaimer "License for 50 MWe" is deleted.

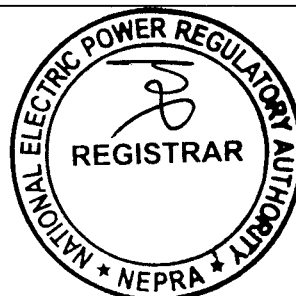
(B). Changes in Schedule-I

- (i). The Item 9 (i.e. Derated Capacity) of the Plant Details is changed to 98.00 MWe.

(C). Changes in Schedule-II

- (ii). The Items (alongwith the disclaimer about restriction of the plant operation) given in Schedule-II are replaced in their entirety by the following: -

1.	Gross Installed Capacity of the Plant	137.00 MWe
2.	Gross Derated Capacity of the Plant	098.00 MWe
3.	Auxiliary Consumption of the Plant	012.00MWe
4.	Net Capacity of the Plant	086.00 MWe
5	Capacity Permitted for Operation	As allowed by Pakistan Nuclear Regulatory Authority (PNRA)



National Electric Power Regulatory Authority
(NEPRA)

Determination of the Authority
In the Matter of Licensee Proposed Modification of
Pakistan Atomic Energy Commission for its
Karachi Nuclear Power Plant

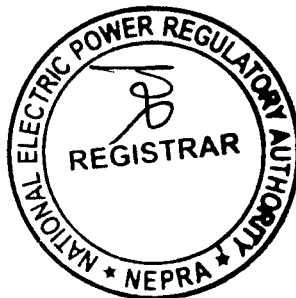
September 15, 2011
Application No. LAG-27

(A). Background

(i). NEPRA granted a Generation Licence (No. GL/022/2005, dated March 04, 2005) to Pakistan Atomic Energy Commission (PAEC) for its Karachi Nuclear Power Plant (KANUPP), located at Karachi, in the Province of Sindh.

(ii). At the time^{of} grant of the above mentioned Generation Licence KANUPP had a Name Plate/Installed Capacity of 137.00 MW De-rated Capacity of 105 MWe and Net Capacity of 93.00MWe (after deducting 12.00 MW of Auxiliary Consumption). However, the Authority restricted the operation of the plant to an equivalent capacity of 50.00 MWe instead of 93.00 MWe on the basis, ~~as~~ determined by the Pakistan Nuclear Regulatory Authority (PNRA).

(iii). Consequently on completion of regulatory requirements of re-licensing, PNRA allowed the operation of KANUPP to an equivalent de-rated capacity of 98.00 MW_e, requiring a modification in the already granted Generation Licence.



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(B). Communication of Licensee Proposed Modification (LPM)

(i). PAEC through its communication of December 14, 2010 formally communicated an LPM for change in the gross de-rated capacity to 98.00 MWe in its Generation Licence and requested for incorporation of the same.

(ii). PAEC in the “Text of the proposed Modification” & “Reason in Support of Modification” statements stated that the Generation Licence of 50 MWe was granted by NEPRA based on the limit of power output allowed by PNRA for operation of the nuclear reactor in the years 2004-05. Upon completion of safety requirements for re-licensing, PNRA formally granted license for operation of KANUPP upto 98.00 MWe, requiring a modification in the Generation Licence of KANUPP.

(iii). Regarding the “Impact on Tariff”, “Quality of Service (QoS)” and “Performance”, PAEC stated that since the award of Generation Licnese from NEPRA in 2005, KANUPP has neither altered the capacity of its generator nor carried out any major modification to its generation infrastructure. Therefore, there will be no effect on tariff, quality of service and performance of KANUPP as regards power generation level of 98.00 MWe.

(C). Processing of LPM

(i). After completion of all the required information as stipulated under the Regulation 10 (2) and 10 (3) of the NEPRA Licensing (Application and Modification Procedure) Regulations, 1999 (the Regulations) by PAEC, the Registrar accepted the LPM as required under the Regulation 10 (4) of the Regulations.

(ii). A notice about the communicated LPM was published in the Newspapers of June 03, 2011, seeking comments from general public and other stakeholders in favor or against the proposed LPM.



(iii). Apart from the notice in the press, separate notices were also sent to experts, government ministries and representative organizations etc. inviting their views and comments.

(D). Comments of Stakeholders

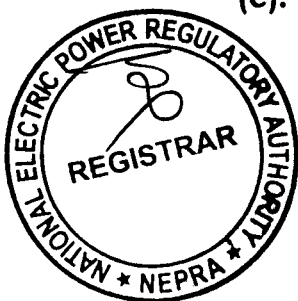
(i). In response to the above published notice of LPM in the press and subsequent correspondences made with other stakeholders, NEPRA received comments from four (04) stakeholders. These included PNRA, National Transmission and Despatch Company (NTDC), Environment and Alternative Energy Department Government of Sindh (E&AEDGoS) and Ministry of Water and Power (MoW&P).

(ii). The salient points of the comments offered by the above mentioned stakeholders are summarized in the following paragraphs: -

(a). PNRA in its comments stated that PNRA licensed KANUPP to operate at power level up to a reactor core power of 1158 MBTU/hr and 98.00 MWe (gross) whichever is less. It was also mentioned that KANUPP is a based load plant and load following is not desirable;

(b). NTDC supported the application of KANUPP for modification of the Generation License for the Gross de-Rated Capacity to 98.00 MWe and Net Capacity to 86.00 MWe as permitted for operation by PNRA;

(c). E&AEDGoS endorsed this office a copy of its correspondence addressed to DG Environmental Protection Agency (EPA), Sindh, for intimating whether the environmental approval for this project was granted or not? E&AEDGoS requested EPA, Sindh to examine the advertisement of NEPRA and for submitting comments.



However, no further communication was received either from E&AEDGoS or EPA, Sindh;

(d). MoW&P while expressing its views stated that NEPRA may process the case according to the NEPRA Act/Rules, consistent with other decisions in similar cases. However, while making any decision in this case environmental and safety issues be given due importance.

(iii). The perspective of PAEC on the aforesaid position of MoW&P was sought for filing their point of view/rejoinder in this regard.

(iv). PAEC in its rejoinder submitted that KANUPP is operating under the safeguards of International Atomic Energy Agency (IAEA). KANUPP is also a member of World Association of Nuclear Operators (WANO) and CANDU Owners Group (COG). Performance and safety reviews have been conducted by these organizations periodically, and nothing was found in terms of design or operational practices that could comprise safety of the plant, or could tend to limit its operation. At the National Level, the safety aspects and environmental aspects of KANUPP operation are comprehensively monitored by PNRA. During its entire operational life, KANUPP has operated safely with no incident that could cause concern to the safety of the people of Karachi or to the plant personnel. Further, there has never been any abnormal release of radioactivity during normal plant operation, and the emissions of radioactive gases and liquids to atmosphere and sea are kept well below the limits prescribed by International Commission on Radiological Protection (ICRP), as confirmed by monitoring teams of IAEA and PNRA. KANUPP has also obtained No Objection Certificate (NOC) from EPA, Sindh.

(v). In view of the satisfactory rejoinder of PAEC, it was considered appropriate to process the communicated LPM without holding any Public Hearing etc.



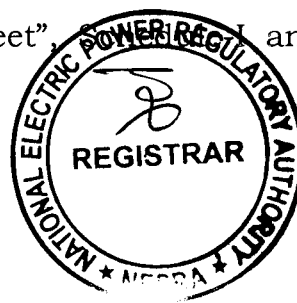
(E). Approval of LPM

(i). The Economic Growth of any Country is directly linked with the availability of reliable, secure and cheaper supply of electricity. The existing energy mix of the country is heavily skewed towards costlier thermal power plants, mainly operating on imported furnace oil. The continuously increasing trend in fuel prices is not only causing severe pressure on the precious foreign exchange reserves of the country but is also resulting in higher consumer end prices. In view of this, the Authority considers it imperative that all the indigenous resources including Renewable Energy (RE) should be explored and their development is encouraged for achieving sustainable development.

(ii). In consideration of the above, the Authority had earlier granted a Generation Licence (No. GL/022/2005, dated March 04, 2005) to PAEC for KANUPP with an Installed Capacity of 137.00 MWe. In view of the determination of PNRA, the operation of KANUPP was restricted to an equivalent capacity of 50.00 MWe. However, upon completion of safety requirements for re-licensing, PNRA granted license for operation of KANUPP upto 98.00 MWe.

(iii). The Authority considers that the request of PAEC for enhancement of the Generation Capacity of KANUPP due to rehabilitation work is worth considering as it will provide 36.00 MWe of additional relatively very cheap electricity (a total of approximately 86.00 MWe) to power starved System of KESC. The additional capacity will not only reduce load shedding but will also improve the system stability in the area served by KESC.


(iv). Accordingly, the Authority hereby approves the communicated LPM in the Generation Licence of PAEC for KANUPP. The modifications/amendments made in the already granted Generation Licence including the "Face Sheet", "Schedule-I" and "Schedule-II" of the



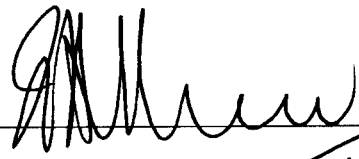
Generation Licence (No. GL/022/2005, dated March 04, 2005) are attached as Annexure-A to this determination. The grant of such a Licensee Proposed Modification would be subject to the provisions contained in the NEPRA Act and relevant Rules and Regulations framed there under.

Authority

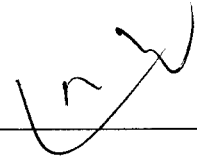
Ghiasuddin Ahmed
Member


16/9/2011

Zafar Ali Khan
Member


19/9/11

Maqbool Ahmad Khawaja
Member



Shaukat Ali Kundi
Member/Vice Chairman

Meeting Not attended

Khalid Saeed
Chairman

