The Fifth Meeting of the Aerodromes Operations and Planning Sub-Group (AOP/SG/5)

Video Conferencing, 29 June to 2 July 2021

Agenda Item 4: Provision of AOP in the Asia/Pacific Region

– Planning & Design of Aerodromes

INSTALLATION OF PRECISION APPROACH CAT I LIGHTING SYSTEM ON HIGH TOWERS IN STEEP TERRAIN AT POKHARA INTERNATIONAL AIRPORT

(Presented by Nepal)

SUMMARY

This paper presents installation of Precision approach CAT I lighting system in steep terrain at Pokhara International Airport which is under construction and will commence its operation from early 2022. To install Precision approach category I lighting system over a distance of 900m, 4 towers of height up to 34m have to be installed due to river basin. The details of the tower and approach lighting system are discussed in this paper.

1. INTRODUCTION

1.1 Pokhara valley, popularly known as the jewel of Himalayas and tourism capital of Nepal. Many tourists visit this valley to see the Himalaya ranges and the famous lakes. At present there is a domestic airport in this valley. In order to facilitate the increasing passenger flow in the city and to enhance international connectivity, new International Airport is under construction.

2. DISCUSSION

Features of Pokhara International Airport

2.1 Salient features of Pokhara International Airport are shown below:

Aerodrome Reference Code:	4D
Runway:	2500m x 45m
Taxiway:	2Nos with width of 23m
Parallel Taxiway:	1200m x 23m
Airport Service Road:	3.5m width
ITB:	Approx. 10000 sq. meter
RFF:	CAT 8
Navigation aids:	ILS CAT I (Localizer Glide path), DVOR/DME
Airport lighting:	Precision approach CAT I lighting system

Figure 1: Layout Plan of Pokhara Airport

Installation of Precision Approach CAT I lighting system at Runway

2.2 The installation of the precision approach CAT I lighting over a distance of 900m was very challenging as there is a Bijaypur river at a distance of 800m from the runway threshold. The river basin is quite steep so it was necessary to install towers of 27m, 31m, 32m and 34m height from the ground level at a distance of 810m, 840m, 870m, and 900m respectively.

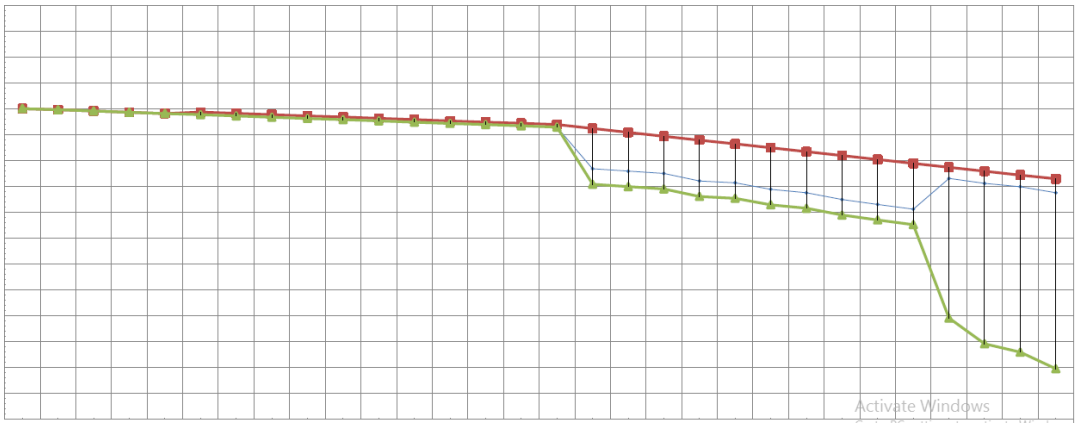

Figure 2: Approach profile showing ground level and light beam level

Figure: 3 Towers for installation of approach light barrettes

2.3 The primary cable for power supply will be laid and isolation transformers will also be installed at the top of these towers. Frangible approach light mast of 2.5 m height will be installed at the top of these towers.

2.4 There will be an access road up to each tower to facilitate maintenance. Since these towers are located outside of the Airport boundary, an individual fencing is provided at each tower to provide security.

Figure: 4 Tower for installation of Approach lighting system as seen from the bank of the river

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the information contained in this paper; and

b) share experience of Pokhara International Airport's Precision approach CAT I lighting system installation at steep terrain for similar ongoing and future projects for enhancing safety and efficiency of aerodrome operations.

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