



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

September 21, 2023

Rick Gaenzle
Chief Executive Officer
Perception Capital Corp. II
3109 W 50th St., #207
Minneapolis, MN 55410

Re: Perception Capital Corp. II
Amendment No. 3 to Registration Statement on Form S-4
Filed September 15, 2023
File No. 333-272880

Dear Rick Gaenzle:

We have reviewed your amended registration statement and have the following comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. If you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments. Unless we note otherwise, our references to prior comments are to comments in our September 6, 2023 letter.

Amendment No. 2 to Registration Statement on Form S-4

Cover Page

1. We note from the cover page that you have increased the registered shares of common stock from 2,080,915 to 7,868,016 and that the additional 5,787,101 shares are attributable to shares of NewCo Common Stock issuable to Spectaire Stockholders, excluding shares of NewCo Common Stock that may be issued to the Requisite Spectaire Stockholders. Please clearly explain the reasons for the increase in registered shares. Please also revise your disclosure throughout the prospectus including, for example, in the Background to the Business Combination section, share ownership tables and Risk Factors section, to discuss any negotiations that occurred regarding these shares, any impact these shares have on dilution to non-redeeming shareholders and any risks to non-redeeming

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shareholders as a result of these shares.

Summary

Certain Engagements in Connection with the Business Combination and Related Transactions,
page 11

2. We note your response to prior comment 1 and reissue the comment. Please revise to disclose how the waiver was obtained, including how and when you were notified of this waiver by each of Moelis and Nomura. Please also tell us why you agreed to the Moelis and Nomura waiver.

You may contact Nudrat Salik at 202-551-3692 or Al Pavot at 202-551-3738 if you have questions regarding comments on the financial statements and related matters. Please contact Jessica Ansart at 202-551-4511 or Jane Park at 202-551-7439 with any other questions.

Sincerely,

Division of Corporation Finance
Office of Industrial Applications and
Services

cc: Michael Mies, Esq.