

DR 53-7844-

Milwaukee

Special Industries Development

Mr. C. W. Warner, Manager

July 2, 1965

Brakes for the Proposed
AISE #800 Motors



This letter is a supplement to my letter of June 7, 1965, under the subject "Brakes for Motors Designed to New Standards". I understand that the question has been asked whether the brake can be dropped one frame size (keeping the same torque) as is proposed in the change from the #600 to the #800 mill motors (keeping the same horsepower). As pointed out in a discussion before I wrote the letter of June 7, there is that possibility; but a more logical solution from the design standpoint is to rearrange the sizes of brakes used with the motors.

Page 2 of my letter of June 7 lists several assumptions made in analyzing brakes to be used with the #800 motors. Those assumptions still hold, but a more detailed explanation of section 1.A. is now desirable. The NEMA brake standard IC 1-20.21 is primarily based on the PRESENT NEMA Industrial Control Standards parts 43 and 44 for Cab and Floor operating cranes. These standards state that the electrically operated brakes are to have sufficient torque to hold at least full load motor torque. Thus, in the present standard setup for the NEMA-AISE brakes with the #600 motors, the ratio of brake torque to F.L. motor torque ranges from 1.01 to 1.72. I particularly stress the PRESENT standards which permit brake torque to be equal to F.L. motor torque because, since the letter of June 7, I received a copy of Mr. Thom's letter of June 4. In that letter he states that NEMA is considering changing the Industrial Control Standards parts 43 and 44 to specify in part "The holding brakes for hoist motors with control braking shall have a rated torque of not less than 150% of the full load hoisting torque at the point where the brake is applied". Note that this is not F.L. motor torque! I am quite sure that NEMA-AISE will set up brake torques based on a minimum percentage of F.L. motor torque rather than on a minimum of 150% full load hoisting torque.

The following discussion is based on brake torque being not less than 100% F.L. motor torque in accordance with present NEMA Standards.

- I. Print SK063065-1-AEL shows three brake combinations for each of the proposed #800 motors.

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