

Need for Internationally Common Specification and Certification for Safer Operation of Class II Biological Safety Cabinets

Shigeo Hino*

Director, Medical Scanning, Nakano 5-68-2-3F, Nakano, Tokyo 164-0001, Japan

A half century has passed since class II biological safety cabinets (BSCs) have been introduced into the biomedical research laboratories in the United States. Various new technologies have been adopted to improve the performance of BSCs in the history. National Sanitation Standard No. 49 (currently NSF/ANSI Std. No. 49) has been used to standardize the specification of BSC. European standard EN12469 and BS5726 have well coordinated feature with the NSF/ANSI Std. No. 49, although there are some minor modifications. Japanese standard JIS K 3800:2009 has also similar content, with minor modifications.

In recent years, BSCs are used also in developing countries where infrastructures of BSC development, certification, and maintenance are not well established. In these situations, BSCs may not provide their desired performance even if they were shipped out from manufacturer and settled in working space in the state of art condition. Furthermore, a BSC which works perfect in the home country might be incompetent in some local conditions. Over ten years ago, I personally experienced an example in Japan. I obtained two brand new BSCs from a US maker. In the major eastern part of Japan including Tokyo has a power supply by 50 Hz at 100 V, and I was located in the western part of Japan by 60 Hz at 100 V. The maker had placed a different motor/fan than the standard US model of the BSC trying to meet for Japanese power supply

condition, because they knew the model will not work properly by 50 Hz at 100 V. The BSCs I received automatically stopped every 10 min because of heat accumulation in the motor. One of my friends found it difficult to certify BSCs annually in an African country because of cost problem to call foreign technicians for inspection. Easy access to technical assistance at low cost is essential to keep BSCs in optimal conditions.

In these days BSCs operated in industrial sectors became more abundant than those in academic sectors. International standard for the performance of BSCs is awaited. Otherwise international agreement to the quality control of each manufacturer will be difficult. Minor modification might be permitted in each country but basic standard should be common. The revision process and revised form of BSC specification should be kept open to public. Up to now, the revision process has been done by closed members and revised edition is expensive to download, approximately 200 USD to download. Newer test equipments have been introduced for certification. To make the space to introduce newer equipments, test equipments should be specified by its performance, not by a catalog number of a specified company.

*Corresponding author: Shigeo Hino, MD, PhD, Director, Medical Scanning, Nakano 5-68-2-3F, Nakano, Tokyo 164-0001, Japan, E-mail: shg.hino@gmail.com

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