This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: C1725 – 17

Standard Guide for Hot Cell Specialized Support Equipment and Tools[1]

This standard is issued under the fixed designation C1725; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 *Intent:*

1.1.1 This guide presents practices and guidelines for the design and implementation of equipment and tools to assist assembly, disassembly, alignment, fastening, maintenance, or general handling of equipment in a hot cell. Operating in a remote hot cell environment significantly increases the difficulty and time required to perform a task compared to completing a similar task directly by hand. Successful specialized support equipment and tools minimize the required effort, reduce risks, and increase operating efficiencies.

1.2 *Applicability:*

1.2.1 This guide may apply to the design of specialized support equipment and tools anywhere it is remotely operated, maintained, and viewed through shielding windows or by other remote viewing systems.

1.2.2 Consideration should be given to the need for specialized support equipment and tools early in the design process.

1.2.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *Caveats:*

1.3.1 This guide is generic in nature and addresses a wide range of remote working configurations. Other acceptable and proven international configurations exist and provide options for engineer and designer consideration. Specific designs are not a substitute for applied engineering skills, proven practices, or experience gained in any specific situation.

1.3.2 This guide does not supersede federal or state regulations, or both, or codes applicable to equipment under any conditions.

1.3.3 *This guide does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

A193/A193M Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications

A354 Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners

A453/A453M Specification for High-Temperature Bolting, with Expansion Coefficients Comparable to Austenitic Stainless Steels

A962/A962M Specification for Common Requirements for Bolting Intended for Use at Any Temperature from Cryogenic to the Creep Range

C859 Terminology Relating to Nuclear Materials

C1217 Guide for Design of Equipment for Processing Nuclear and Radioactive Materials

C1533 Guide for General Design Considerations for Hot Cell Equipment

C1554 Guide for Materials Handling Equipment for Hot Cells

C1615 Guide for Mechanical Drive Systems for Remote Operation in Hot Cell Facilities

C1661 Guide for Viewing Systems for Remotely Operated Facilities

SI10-02 IEEE/ASTM SI 10 American National Standard for Use of the International System of Units (SI): The Modern Metric System

2.2 *Federal Regulations:*[3]

10 CFR 830.120 Subpart A, Nuclear Safety Management, Quality Assurance Requirements

[1] This guide is under the jurisdiction of ASTM Committee C26 on Nuclear Fuel Cycle and is the direct responsibility of Subcommittee C26.14 on Remote Systems.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from U.S. Government Printing Office Superintendent of Documents, 732 N. Capitol St., NW, Mail Stop: SDE, Washington, DC 20401, http://www.access.gpo.gov.

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