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## **Addendum 2**

*Section 2: The following normative reference shall be added to the list:*

ANSI/ASME B1.1, *Unified Inch Screw Threads, (UN and UNR Thread Form)*

*Section 2: The following normative reference shall be added to the list:*

ISO 17020, *Conformity assessment – Requirements for the operation of various types of bodies performing inspection*

*Section 4.2.2: The following shall be added after the first sentence:*

For subcontracted ultrasonic examination, magnetic particle inspection, and liquid penetrant inspection, qualification to ISO 17020 is an acceptable alternative to ISO 17025.

For outsourced NDE services of ultrasonic examination, magnetic particle inspection, and liquid penetrant inspection, qualification to a quality management system in accordance with 5.2.2.1.1 is acceptable.

*Section 5.2.2.1.1 shall be replaced with the following:*

A quality management system evaluation in accordance with ISO 9001, API Q1, ISO 17020 (for subcontracted NDE only), or ISO 17025 for all BSLs.

*Section 5.2.3 a) shall be replaced with the following:*

a) BSL-1 Requirements

A quality management system evaluation in accordance with ISO 9001, API Q1, ISO 17020 (for subcontracted NDE only) or ISO 17025.

*Section 5.2.3 b) shall be replaced with the following:*

b) BSL-2 Requirements

- 1) Requirements specified for BSL-1 are required for BSL-2.
- 2) Onsite process audit performed by a technical authority at an interval no greater than 3 years, or independent or third-party evidence of conformance to the following industry quality standards, as applicable:
  - i. For subcontracted NDE only, ISO 17020 or similar industry recognized quality management system standard (see 5.2.2.1.1) is acceptable.
  - ii. For laboratory services, ISO 17025 is the only acceptable substitute for an onsite process audit or technical evaluation.

*Section 5.4.4 g) shall be replaced with:*

g) furnace load diagrams or representative photos.

*Section 5.4.5.3 shall be replaced with:*

Manufacturing processes shall be performed so as to avoid the introduction of stress risers that can occur from sharp angles and tool marks. Threads may be cut or rolled. Unified National Threads shall be “R” (UNR controlled radius series) for external threads and UN for internal threads (ANSI/ASME B1.1).

*Section 5.4.6.4 shall be replaced with:*

When threads are rolled, parts shall subsequently be stress relieved at a temperature within 50 °F (28 °C) of, but not exceeding, the actual final tempering temperature which is intended to establish mechanical properties. This stress relief requirement is also met if the final temper heat treatment is done after any type of thread forming.

*Section 5.4.6.6 shall be replaced with:*

Furnace loading diagram or photo shall be prepared for each load configuration.

# **Alloy and Carbon Steel Bolting for Use in the Petroleum and Natural Gas Industries**

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ADDENDUM 2, MARCH 2019



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