Interpretation: 2-1

Subject: ANSI B30.2.0-1976

Date Issued: March 19, 1984

Question: Can the B30 Committee allow relief from para. 2-1.10.3a of ANSI B30.2.0-1976?

Reply: ANSI B30.2.0-1976 is of, and by itself, a voluntary standard and as such requires no relief from the B30 Committee. See Section II, Purpose, of the Introduction to ANSI B30.2.0-1976.

ANSI B30.2.0 may be cited by a regulatory body or by an administrative authority having oversight of the operation and thereby becomes an operating directive that must be observed. Note that the Federal Register Vol. No. 105 Saturday 29 May 1971 Section 1910.79g3i cites para. 2-1.10.3a almost verbatim and from this we may conclude that this is a workplace requirement.

The intent of para. 2-1.10.3a is to require an intentional and overt reset action by the operator in order to restart motion following a stop caused by a power loss. To have an unplanned restart condition is considered unsafe and should be corrected.

In view of your history of no accidents and low usage rate you may wish to consider Section III, Exceptions and Interpretations, and Section IV, New and Old Installations, of ANSI B30.2.0-1976, as your basis for not modifying your present equipment.
Interpretation: 2-2

Subject: ANSI/ASME B30.2-1983

Date Issued: August 2, 1984

Question: What criteria or code, if any, should be used as a guideline for performing Periodic Inspection, Subsection 2-2.1.3 and para. 2-2.1.3(a) in particular?

Reply: ANSI B30.2.0-1976 has been superseded by ANSI/ASME B30.2-1983, issued October 17, 1983. Reference should be made to the revised standard in establishing your inspection program.

Subsection 2-2.1.3, Periodic Inspection, on page 19 of ANSI/ASME B30.2-1983 reads (changes in italics):

"(a) Complete inspections of the crane shall be performed at intervals, as defined in 2-2.1.1(b)(2). Any deficiencies, such as listed, shall be examined by a designated person and determination made as to whether they constitute a hazard. These inspections shall include the requirements of 2-2.1.2 and, in addition, items such as the following:"

Referring to ANSI/ASME B30.2-1983, the Periodic Inspection shall be performed by an appointed person using visual examination, as stated in para. 2-2.1.1(b)(2). Suggested items to be examined are listed in para. 2-2.1.3(a)(1) through (a)(9).

If deficiencies are found during this visual inspection, such deficiencies shall be examined by a designated person to determine whether they constitute a hazard, as stated in para. 2-2.1.3(a).

The method, extent, and acceptance criteria for the examination of any deficient components (including "deformed, cracked, or corroded members") should be determined by the designated person making the examination or by the supervisor.

When establishing inspection intervals for the crane, consideration should be given to both para. 2-2.1.1(b)(2) and para. 2-2.1.4 in ANSI/ASME B30.2-1983.

As explained in the Introduction on page 1 of this Standard, the ANSI B30 Standards are written to serve as a guide to governmental authorities, manufacturers, purchasers, and users of the equipment. The specific rules must be interpreted using good engineering and economic judgment. User compliance with ANSI Standards is voluntary unless adopted by governmental authority. Where NUREG requirements differ from this Standard, the NUREG requirements would govern.
**Interpretation: 2-3**

Subject: USAS B30.2.0-1967, Section 2-0.1, Scope

Date Issued: March 19, 1985

Question (1): Does a crane that provides hoisting and trolleying functions, but does not travel on a runway, come under B30.2.0-1967?

Reply (1): The scope of B30.2.0, as stated in Section 2-0.1, specifies that the Standard applies to overhead and gantry cranes, "and others having the same fundamental characteristics. These cranes are grouped because they all have trolleys and similar travel characteristics."

Paras. 2-0.2.1.6 and 2-0.2.1.8 define gantry crane and overhead crane, respectively. Both definitions include travel on a fixed runway or rail system. Therefore, a crane that does not travel, or that does not travel on a fixed runway or rail system, does not fall within the scope of B30.2.0-1967.

Question (2): Are the testing requirements of B30.2.0-1967 mandatory or are they recommendations?

Reply (2): For cranes within the scope of B30.2.0-1967, the operational tests set forth under para. 2-2.2.1 are mandatory, while the rated load test of para. 2-2.2.2 is recommended.

Note: This interpretation should have appeared in ANSI/ASME B30.2-1983 Interpretations — No. 1, covering interpretations issued from 1983 through 1985.

**Interpretation: 2-4**

Subject: ANSI B30.2.0-1976, Bridge Bumpers (Buffers) and Runway Stops

Date Issued: March 20, 1985

Question (1): Is para. 2-1.8.2a.1 the only part of para. 2-1.8.2 which applies to runway stops?

Reply (1): Yes.

Question (2): When determining the stopping force produced by the requirements of para. 2-1.8.2a.1, should the loaded or the unloaded weight of the crane be used?

Reply (2): The unloaded weight of the crane, less the weight of the block(s), should normally be used. The lifting load(s) is not to be considered in determining the stopping force at the bumpers unless the load is guided vertically (not freely suspended).

Question (3): Does the requirement of para. 2-1.8.2a.3 apply only to bumpers or does it also apply to runway stops?

Reply (3): The requirement of para. 2-1.8.2a.3 applies to the bumpers only. It does not apply to the runway stops.

Note: This interpretation should have appeared in ANSI/ASME B30.2-1983 Interpretations — No. 1, covering interpretations issued from 1983 through 1985.
Interpretation: 2-5

Subject: ANSI/ASME B30.2-1983, Limit Switches and Anticollision Devices

Date Issued: May 23, 1985

Question: What is the intent of the phrase, "all limit switches," in para. 2-2.1.2(a)(2) of ANSI/ASME B30.2-1983, which reads:
"(2) All limit switches should be checked, without a load on the hook, at the beginning of each work shift. Care should be exercised. Each motion shall be inched into its limit switch, or run in at a low speed."

Reply: This question concerns four areas:
(1) cranes having two or three upper limit switches,
(2) cranes having a lower limit switch,
(3) cranes having bridge and/or trolley travel limit switches, and
(4) cranes having anticollision devices.

Para. 2-2.1.2(a)(2) should be considered together with paras. 2-1.10.5(d) and (e), which read:
"(d) The hoisting motion of all electric traveling cranes shall be provided with an overtravel limit switch in the hoisting direction to stop hoisting motion.

(e) Lower travel limit switches should be provided for all hoists where the load block enters pits or hatchways in the floor."

The inspection requirement of para. 2-2.1.2(a)(2) applies only to the limit switches specifically required or recommended in the Standard. This Standard does not address multiple hoist limit switches, bridge and/or trolley travel limit switches, or anticollision devices.

Inspection of a hoist upper limit switch is intended to confirm that the limit switch setting conforms to the requirements of para. 2-2.2.1(d), which reads:
"(d) Limit switches. The trip setting of hoist limit devices shall be determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The acting mechanism of the limit device shall be located so that it will trip the device under all conditions, in sufficient time to prevent contact of the hook or load block with any part of the trolley or crane."

Inspection of a hoist lower limit switch is intended to confirm that the limit switch setting conforms to the requirements of para. 2-1.11.3(c)(1), which reads:
"(c) Rope shall be secured to the drum as follows:

1. No less than two wraps of rope shall remain on each anchorage of the hoisting drum when the hook is in its extreme low position unless a lower limit device is provided, in which case no less than one wrap shall remain."

The inspection requirements may also be applied to the other limit switches or to anticollision devices if the owner or regulatory authorities wish to do so, but such inspection is not a part of the Standard.

ANSI/ASME B30.2 is intended to apply to overhead and gantry cranes as used in general industrial applications. When the crane application is such as to require special precautions or devices above and beyond those required by this Standard, the authority which determines the need for the additional precautions or devices should also determine the extent of the additional inspection or testing required.

Note: This interpretation should have appeared in ANSI/ASME B30.2-1983 Interpretations — No. 1, covering interpretations issued from 1983 through 1985.
**Interpretation: 2-6**

**Subject:** ANSI/ASME B30.2-1983, Sudden Acceleration and Deceleration of Load

**Date Issued:** September 12, 1985

**Question (1):** Para. 2-3.2.3(b)(1) of ANSI/ASME B30.2-1983 reads as follows:

"(b) During lifting, care shall be taken that:

(1) There is no sudden acceleration or deceleration of the moving load; . . . ."

What is meant by, "sudden acceleration or deceleration?"

**Reply (1):** Sudden acceleration or deceleration in the context of this paragraph would be starting or stopping the load, during lifting, in such an abrupt manner that impact forces on the hoisting components or other parts of the crane would exceed such forces used in the design of the crane, or the maximum impact forces recommended by the crane manufacturer.

A typical example of sudden acceleration might result from the operator neglecting to carefully remove all slack from the sling or ropes before proceeding to lift the load.

A typical example of sudden deceleration might result from the operator moving the hoist controller from full-speed hoisting position to the "off" position without pausing at intermediate controller positions to allow a gradual slowdown of the lifted load.

**Question (2):** What measure can be utilized to determine acceptable from unacceptable acceleration or deceleration?

**Reply (2):** A more thorough description of the recommended operating procedure for accelerating or decelerating a lifted load can be obtained from the Crane Operator Manual published by the Crane Manufacturers Association of America.

Note: This interpretation should have appeared in ANSI/ASME B30.2-1983 Interpretations — No. 1, covering interpretations issued from 1983 through 1985.

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**Interpretation: 2-7**

**Subject:** ANSI/ASME B30.2-1983, Activation of Warning Device or Means

**Date Issued:** March 4, 1986

**Question:** Should the required warning device or means of Section 2-1.12 be activated by the crane operator as needed to alert workers or be activated continuously while the crane is in motion?

**Reply:** Section 2-1.12 refers only to the provision of warning devices or means. The operation of such devices or means is covered by para. 2-3.1.7(e), p. 24, which reads:

"(e) If a warning device is furnished, it shall be activated each time before traveling, and intermittently when approaching workpersons."

ANSI/ASME B30.2 does not make any distinction between overhead cranes and gantry cranes as to this requirement.

As for the rationale for para. 2-3.1.7(e), the B30 Committee feels that warning devices are most effective if they are activated only when a hazardous condition may be imminent. A warning device which is activated continuously, when there may be no imminent hazard, tends to be ignored after a short period of time and thereby loses its effectiveness.
Interpretation: 2-8

Subject: USAS B30.2.0-1967, Overhead and Gantry Cranes

Date Issued: May 26, 1986

Question: Does Section 2-1.9.3a of USAS B30.2.0-1967 require the use of spring-return, lever-operated controllers, as distinguished from drum-type controllers or pushbuttons?

Reply: In replying to the question, the B30 Committee assumes that, when using the term "lever-operated controllers," it is referring to a control circuit device commonly called a "master switch." A "master switch" is the manual actuating component of a magnetic controller. Refer to definition 2-0.2.2.40.4 on p. 5 of USAS B30.2.0-1967.

Section 2-1.9.3a on p. 11 of USAS B30.2.0-1967 applies equally to manual (drum) controllers, master switches, or pushbuttons because it applies to the controller in its entirety. Spring-return controllers are not required if a disconnect or reset button is provided per Section 2-1.9.3a.

USAS B30.2.0-1967 has been superceded first by ANSI B30.2.0-1976 and then by ANSI/ASME B30.2-1983. Section 2-1.10.3a, p. 14 of B30.2.0-1976, and Section 2-1.10.3(a), p. 14 of B30.2-1983, have both been revised to clarify this requirement. The definition for "controller" has been added to both issues. The definition for "switch, master, spring return" has been added to B30.2-1983.

When using the ANSI/ASME B30 series of standards, reference should be made to the latest issue and addenda of the applicable standard.
Interpretation: 2-9

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes, Top Running Bridge, Single or Multiple Girder (Top Running Trolley Hoist)

Date Issued: September 11, 1986

Do the following questions and replies represent the intent of the subject standard?

Question (1): The footwalk requirements in para. 2-1.7.1 are to provide access to the overhead crane components for maintenance and repairs.

Reply (1): Correct.

Question (2): Maintenance and repairs are intended to be performed on an overhead crane which has been subjected to the maintenance procedures outlined in para. 2-2.3.2.

Reply (2): Correct.

Question (3): A bridge footwalk is not intended to be used by personnel when the crane is operational and performing its normal operational functions of bridge travel, trolley travel, or hoisting.

Reply (3): Correct. Refer to definition of "normal operating conditions" on p. 5.

Question (4): The headroom requirements are intended to provide working headroom for maintenance personnel on an overhead crane which has already been "run to a location where it will cause the least interference with other cranes and operations in the area" [para. 2-2.3.2(a)(1)] and where "headroom is available" [para. 2-1.7.1(a)], and after the maintenance procedures in para. 2-2.3.2 have been followed.

Reply (4): Correct.

Question (5): "Headroom" and "clearance" have separate meanings as used in the standard.

Reply (5): Correct. Refer to definition of "clearance" on p. 4. The word "headroom" has not been defined because the word is considered to be generic.

Question (6): An overhead crane which is installed in a building where there are several locations along the bridge travel where "clearance" between the roof trusses and the floor of the footwalk is less than 48 in. will meet the standard with respect to "headroom" requirements if the crane can be moved to locations where at least 78 in. of "headroom is available."

Reply (6): An overhead crane installed in the manner described will meet the intent of the standard.

Question (7): The definition of "overhead clearance" is the distance between the highest point on the overhead crane and the lowest point on the building along the bridge runway travel.

Reply (7): The interpretation is consistent with the definition of "clearance" on p. 4 and with para. 2-1.2.1(a) on p. 9.

Question (8): "Headroom" is the distance from the floor of the walkway platform to overhead obstructions measured at any location along the runway where the provisions of para. 2-2.3.2 have been met.

Reply (8): The definition of "headroom" stated above is consistent with the intent and spirit of the standard.
Interpretation: 2-10

Subject: ASA Standard B30.2-1943, Safety Standard for Cranes, Derricks, and Hoists

Date Issued: September 11, 1986

Question: What rationale was used by the B30 Committee in establishing the 78 in. recommended and 48 in. minimum headroom in paras. 1131b and 1131c of the subject standard?

Reply: ASME files do not contain any detailed record of the deliberations of the B30 Committee which took place when formulating the ASA B30.2-1943 standard.

The rationale for the provisions of this standard reflects the consensus of the individuals in the categories of interest who approved the wording of the standard through ASME Committee and Supervisory Board actions, public review, and final approval by the American Standards Association in January 1943.
Interpretation: 2-11

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: December 11, 1986

Question (1): Should the same wire rope or hoist chain, hook, and other inspection requirements of B30.2 be applied to equipment covered by the scopes of B30.7, B30.11, and B30.17?

Question (2): Inspection requirements for hoists (B30.16) do not require documented monthly inspections of the wire rope or chain. Since off center loading as well as other factors of misuse are quite possible, we would like to know why.

Question (3): What is the rationale for requiring monthly wire rope or chain inspections, rather than basing the frequency of usage?

Before answering the three questions, several facts concerning inspection requirements and the B30 series of standards are being furnished for information.

- Section 1910.179 of the Federal Register adopted portions of the 1967 Edition of B30.2.0. The Department of Labor has stated that Section 1910.179 applies only to the types of overhead cranes defined in that ANSI standard.
- ANSI and ANSI/ASME standards B30.7, B30.11, B30.16, and B30.17 were developed after the adoption of Section 1910.179 of the Federal Register.
- The B30.11 and B30.17 standards do not include rope inspection requirements and reference B30.16 for the hoisting device.
- The latest editions of B30.2, B30.17, and B30.16 have consistent wire rope, hoist chain and hook inspection requirements, and are based on frequency of usage and conditions.

Reply (1): Yes.

Reply (2): Arbitrary documented monthly inspections are an undue burden and not related to safety without consideration of frequency of use, condition of the component, or environment. All types of misuse, including off center loading, are not recommended.

Reply (3): Current editions of B30.2, B30.7, and B30.16 require wire rope or chain inspections based on frequency of usage.
Interpretation: 2-12

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: March 18, 1987

Question (1): Is it the intent of ANSI/ASME B30.2, Section 2-2.2 to:
(a) classify the disassembly/reassembly of crane hoist gearboxes, for routine maintenance purposes (i.e., inspection, cleaning, cosmetic filing, bearing replacements), as "extensively repaired," thereby requiring a rated load test (at 125% rated load)?
(b) require a rated load test for the in-kind replacement of hoist wire rope that has been certified (destructive load test) by the rope manufacturer?

Question (2): Per ANSI/ASME B30.2, Section 202.2 (sic), is it reasonable and acceptable to assume a ± 1% tolerance for test loads at 125% of the cranes' rated load?

Question (2) appears to have a typographical error and the Committee assumes that the question refers to Section 2-2.2.

The questions were discussed based upon the background information furnished which fails to fully describe the cause of bearing failure and subsequent actions or occurrences following such bearing failure. Therefore, the Committee can only address the questions in a general nature and may require additional analysis for the specific situation.

The Committee replies to your questions as follows.

Reply (1)(a): Section 2-2.2 of ANSI/ASME B30.2b-1986 contains two paragraphs: para. 2-2.2.1, Operational Tests; and para. 2-2.2.2, Rated Load Test. Both paragraphs apply to extensively repaired cranes. Operational tests are required under all conditions based on use of the word "shall." A rated load test is a recommendation to be considered, the advisability of which depends on the facts in each situation based on the use of the word "should."

The B30 Committee considered "extensively repaired" to include repairs of structural and mechanical components whose failure would cause an uncontrolled movement of the live load.

The disassembly/reassembly of crane hoist gear boxes for routine maintenance, including normal bearing replacement, requires an operational test in accordance with para. 2-2.2.1.

The disassembly/reassembly of crane hoist gear boxes for replacement of failed bearings requires an operational test in accordance with para. 2-2.2.1 and, based upon an analysis of the causes and results of such failure, may require a rated load test in accordance with para. 2-2.2.2.

Reply (1)(b): A rated load test in accordance with para. 2-2.2.2 is not required when a replacement wire rope with appropriate end connections has been proof tested or certified by the wire rope manufacturer; however, an operational test in accordance with para. 2-2.2.1 is required. If rope clips, wedge, etc., are installed as separate items during wire rope installation, a rated load test is required in accordance with para. 2-2.2.2.

Reply (2): Para. 2-2.2.2 states that "test loads shall not be more than 125% of the rated load, unless otherwise recommended by the manufacturer." The B30 Committee feels it is safe and acceptable to allow a tolerance of +0%, –4% on the 125% figure. The 125% should not be exceeded unless approved by the manufacturer.
Interpretation: 2-13

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: October 6, 1987

Question (1): What types of maintenance are defined as "extensively repaired?"

Reply (1): Consideration should be given to the following items identified to determine the need to load test a crane under conditions where extensive repairs are concerned. The need should also be substantiated by a qualified person.

Maintenance included in the term "extensively repaired" is considered to be replacement of load-sustaining structural components such as trolley frames, girders, end trucks and gantry legs, and machine power transmission components such as hoist, trolley, and bridge drives. In addition to replacements, repair of structural components, as noted above, including welding or the addition of supports by other than welded means, is also considered "extensive repairs."

Question (2): Do the rated-load test requirements apply to the owner once a crane is installed at the owner's facility, or only to the manufacturer after the manufacturer sets up the crane at the owner's facility?

Reply (2): A new crane installed in a facility is required to be load tested. The responsibility for performing the test can be borne either by the owner or the manufacturer, depending upon the terms of the purchase agreement entered into between the owner and the manufacturer.

Subsequent testing of the crane, for any reason, is the responsibility of the owner.

Question (3): If the rated-load test applies to the owner, then can a figure less than the rated load or design load be used to compute the test load? For example, if the rated load for the gantry crane in the turbine building is 12 tons but the heaviest load the crane will lift is 10 tons, can the test load be 12.5 tons (125% of 10 tons) instead of 15 tons (125% of 12 tons)?

Reply (3): Quoting from ANSI/ASME B30.2-1983 (including Addenda), Section 2-2.2.2(a), page 20, "The load rating should not be more than 80% of the maximum load sustained during the test. Test loads shall not be more than 125% of the rated load, unless otherwise recommended by the manufacturer."

This requirement is presented as a recommendation rather than as a mandated test requirement, and therefore it is not mandatory to perform a load test at 15 tons for your 12 ton crane. However, the B30 Committee has established, through practice and experience, that the theory of rating a crane at 80% of the load at which it is load tested is a good policy. It is therefore recommended that if the maximum load to be lifted never exceeds 10 tons, that the crane be rated at 10 tons and the load test be conducted at 12.5 tons rather than rating the crane at 96% (12 tons) of the 12.5 ton test load. The rated load marking on the crane should also be changed to reflect the new rating.
Interpretation: 2-13(R)

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: December 21, 1987

Question (1): What types of maintenance are defined as "extensively repaired?"

Reply (1): Consideration should be given to the following items identified to determine the need to load test a crane under conditions where extensive repairs are concerned. The need should also be substantiated by a qualified person.

Maintenance included in the term "extensively repaired" is considered to be replacement of load-sustaining structural components such as trolley frames, girders, end trucks and gantry legs, and machine power transmission components such as hoist, trolley, and bridge drives. In addition to replacements, repair of structural components, as noted above, including welding or the addition of supports by other than welded means, is also considered "extensive repairs."

Question (2): Do the rated-load test requirements apply to the owner once a crane is installed at the owner's facility, or only to the manufacturer after the manufacturer sets up the crane at the owner's facility?

Reply (2): A new crane installed in a facility is recommended to be load tested. The responsibility for performing the test can be borne either by the owner or the manufacturer, depending upon the terms of the purchase agreement entered into between the owner and the manufacturer.

Subsequent testing of the crane, for any reason, is the responsibility of the owner.

Question (3): If the rated-load test applies to the owner, then can a figure less than the rated load or design load be used to compute the test load? For example, if the rated load for the gantry crane in the turbine building is 12 tons but the heaviest load the crane will lift is 10 tons, can the test load be 12.5 tons (125% of 10 tons) instead of 15 tons (125% of 12 tons)?

Reply (3): Quoting from ANSI/ASME B30.2-1983 (including Addenda), Section 2-2.2.2(a), page 20, "The load rating shall not be more than 80% of the maximum load sustained during the test. Test loads shall not be more than 125% of the rated load, unless otherwise recommended by the manufacturer."

This requirement is presented as a recommendation rather than as a mandated test requirement, and therefore it is not mandatory to perform a load test at 15 tons for your 12 ton crane. However, the B30 Committee has established, through practice and experience, that the theory of rating a crane at 80% of the load at which it is load tested is a good policy. It is therefore recommended that if the maximum load to be lifted never exceeds 10 tons, that the crane be rerated at 10 tons and the load test be conducted at 12.5 tons rather than rating the crane at 96% (12 tons) of the 12.5 ton test load. The rated load marking on the crane should also be changed to reflect the new rating.
Interpretation: 2-14

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: March 21, 1988

Question: Is it harmful to the crane's physical integrity to load test on a scheduled basis, such as annually or every 3 years, when it is not required?

Reply: It is not harmful to the physical integrity of a crane to load test it at 125% of rated load on a scheduled basis such as annually or every 3 years, provided the crane is manufactured, installed, inspected, maintained, and operated in accordance with the procedures described in ANSI/ASME B30.2.
**Interpretation: 2-15**

Subject: USAS B30.2.0-1967

Date Issued: September 30, 1988

Question (1): When repair work is done on a crane, should the test weight be lifted and the trolley and crane driven their full length of travel?

Reply (1): To be determined by a qualified person.

Question (2): Is there any certain length of time the test load is to remain suspended or a specified height the test load is to be lifted?

Reply (2): No.

Question (3): Do limit switches have to be tested?

Reply (3): Yes. Refer to operational test.

Question (4): Is it correct to assume that full horizontal travel of the trolley and crane is all that is required?

Reply (4): No. Refer to rated load test.

Question (5): Can it be assumed that when the crane is function tested, that the main crane rails, the rail support steel including the support columns, are certified at the same time?

Reply (5): It is assumed that use of the phrase *function tested* is the same as *operational test* as listed in para. 2-2.2.1. Based upon this assumption, the support columns are not certified by function testing of the crane. Runways and support columns can be load tested by following the rated load testing requirements; however, this is not considered as certified. Runway and support columns can only be certified by a Registered Professional Engineer.

Question (6): Does replacement of such items as wire rope, cable clips, and brake shoes require functional testing?

Reply (6): To be determined by a qualified person.

Question (7): What qualifications are required for an individual to function test and certify cranes?

Reply (7): ASME/ANSI B30 volumes do not provide for equipment certification. However, an individual making the operational test should be a *qualified person* as defined on p. 7 of B30.2-1983. An individual making the rated load test should be a *designated person* or *authorized person* as defined on p. 5 or p. 3 of the same volume.
**Interpretation: 2-16**

**Subject:** ANSI/ASME B30.2-1983

**Date Issued:** August 24, 1989

Question (1): Are cranes marked with dual load ratings such as “20 Tons/Occasional 40 Tons” an acceptable practice according to ANSI/ASME B30.2, para. 2-1.1(a)?

Reply (1): Cranes marked with dual load ratings such as “20 Tons/Occasional 40 Tons” is not an acceptable practice according to ANSI/ASME B30.2, para. 2-1.1(a). The rated load of the crane is the maximum load for which the crane was designed and built. Only one rated load shall be marked on each side of the crane. The only conditions under which a crane may make lifts in excess of the rated load is covered in ANSI/ASME B30.2-1983, Section 2-3.2, Handling the Load.

Question (2): Are cranes having multiple trolley units wherein the crane is rated only to the capacity of the maximum hoisting unit acceptable according to ANSI/ASME B30.2, para. 2-1.1(a)?

Reply (2): Cranes having multiple trolley units can have different load ratings for the crane and individual hoists. The rated load for each hoist is the maximum load designated by the manufacturer for which each hoist is designed and built, and the rated load for the crane (bridge) is the maximum load designated by the manufacturer for which the crane (bridge) is designed and built. Loads applied to trolley hoisting units on a crane can be cumulative within the rated load of each hoisting unit, but the total cumulative load cannot exceed the rated load of the crane. Marking must clearly state the rated load for each hoisting unit and the rated load for the crane. Therefore, cranes having multiple trolley units wherein the crane is rated to the capacity of the maximum hoisting unit are acceptable according to ANSI/ASME B30.2, para. 2-1.1(a).

**Interpretation: 2-17**

**Subject:** ANSI/ASME B30.2-1983

**Date Issued:** September 15, 1989

Question (1): Is the title of para. 2-2.2.2, Rated Load Test, interpreted to mean other than 100% rated load test?

Reply (1): The purpose of para. 2-2.2.2 is to confirm by test the load rating of the crane and support structure. The test load may exceed the 100% value of the rated load of the crane to confirm the rated load of the crane as fully outlined in this paragraph.

Question (2): Is the first sentence of para. 2-2.2.2(a), “cranes should be tested and inspected,” interpreted to mean that it is an option and need not be done unless the owner, his representatives, the crane manufacturer, or others such as OSHA require it be done?

Reply (2): Because of the very broad range of applications and situations involving overhead cranes, para. 2-2.2.2(a) uses the word *should*, which by definition states “this word indicates that a rule is a recommendation, the advisability of which depends on the facts in each situation.”
Question (3): If the answer to Question 2 is yes, then how does the designated or authorized person confirm the load rating of the crane in a written report?

Reply (3): If a rated load test is performed, the designated or authorized person makes a written report of the details of the test performed on and by the crane. When no test is performed, there is no confirmation.

Question (4): Does the designated or authorized person produce a written report based on his review of load calculations supplied by the manufacturer, or is load rating of crane left to the crane manufacturer and/or the jurisdictional authorities such as OSHA?

Reply (4): Paragraph 2-2.2.2(a) does not address any review of load calculations. It addresses the application of a test load only and the report required is addressed in the reply to Question 3.

Question (5): Is the second sentence of para. 2-2.2.2(a) interpreted to mean that if the crane hoists 125% of rated load, i.e., 200 tons, it should be given a rating of not more than 160 tons?

Reply (5): Yes.

Question (6): Is the phrase “load sustained during test” interpreted to mean hoisted and held by the crane brakes without traveling the full envelope of travel with bridge and trolley?

Reply (6): No. If the rated load test is conducted, the operations listed in paras. 2-2.2.2(b)(1) through (4) shall be performed unless modified and documented by a qualified person.

Question (7): Does the third sentence of para. 2-2.2.2(a), “Test loads shall not be more than 125% of the rated load,” mean the same as the second sentence of para. 2-2.2.2(a), i.e., 80% of the maximum load sustained during test equals rated load, 125% of rated load equals maximum test load to be sustained?

Reply (7): Yes. The dual wording is used to indicate that a load rating in excess of that designated by the crane manufacturer cannot be applied by means of the rated load test.

Question (8): Do all of the second and third sentences of para. 2-2.2.2(a) describe how to determine the load rating of the crane, i.e., load rating should not be more than 80% of maximum test weight sustained, or, conversely, test weights equal to 125% of rated load should be hoisted and sustained in order to certify crane load rating at 80% of maximum load sustained.

Reply (8): Yes.

Question (9): Does para. 2-2.2.2(b) mean that the rated load test does not necessarily have to be made to certify crane load rating?

Reply (9): Yes. Refer to the reply to Question 2.

Question (10): Does para. 2-2.2.2(b) also mean or reinforce para. 2-2.2.2(a) which implies the crane can be load rated by review of design calculations or by hoisting and sustaining a load equal to 125% of the desired load rating and inspecting crane components for signs of overloading and overstressing?

Reply (10): Please refer to the reply to Question 4.
Question (11): Does para. 2-2.2.2(b) also mean, as stated, if made, it shall — not should — consist of the following operations as a minimum requirement (paras. 2-2.2.2(b)(1) through (4))?  

Reply (11): Yes. While the rated load test is a recommendation based on use of the word should, if it is determined to conduct such a test, the requirements of paras. 2-2.2.2(b)(1) through (4) are mandatory by use of the word shall unless modified and documented by a qualified person. Refer to the reply to Question 6.  

Question (12): Does para. 2-2.2.2(b) also mean rated load test as stated, i.e., 160 tons, not 125% of rated load or 200 tons?  

Reply (12): No.  

Question (13): Is the rated, not rating, load test to be done with a load that is equal to 100% or 125% of crane rated load?  

Reply (13): If the test is conducted to confirm the rated load of the crane, a test load of 125% of rated load is required.  

Question (14): If the reply to Question 13 is 125%, then should the title be changed to rating load test instead of rated load test?  

Reply (14): No. The purpose of the test is to confirm the rated load of the crane.  

Question (15): Is the overall intent of Section 2-2.2, Testing, to:  
(a) operate the crane unloaded through all of its motions, checking all limits, safety features, and control logics in order to confirm its operational features and insure compliance with subject volume?  
(b) operate the crane under its rated conditions and load through all of its motions, checking all limits, safety features, and control logics in order to confirm its operational features and insure compliance with subject volume?  
(c) hoist and sustain 125% of crane rated load in order to confirm the load rating of the crane at 80% of maximum load sustained and to insure compliance with subject volume?  

Reply (15): (a) Yes.  
(b) No.  
(c) No.  

Question (16): If the overall intent of this Section is to insure compliance with the subject volume then why are such words as should be, should not be, and if made used?  

Reply (16): The word shall is used when a rule is to insure compliance, and the word should is used when a rule is a recommendation not related to insure compliance.  

Question (17): If the overall intent of this Section is to provide guidelines for confirming or assuring crane operational testing and load ratings with respect to subject volume, then words, “shall be tested . . . to insure compliance” are no longer appropriate and should be changed to “should be tested . . . to confirm or assure compliance,” or other verbiage which implies nonmandatory options.  

Reply (17): Question 17 is a statement and does not pose a question. Therefore, a reply cannot be presented.
Interpretation: 2-18

Subject: ANSI/ASME B30.2-1983

Date Issued: September 21, 1989

Question (1): What type of brake(s) satisfy the requirements of para. 2-1.9.8(c)?

Reply (1): The B30 Committee cannot list a specific type or brand of brake to meet this requirement. Any brake that meets the requirements of para. 2-1.9.6(b) complies with the intent of para. 2-1.9.8(c). A separate emergency brake is not required. As stated in para. 2-1.9.6(c), “Any combination of service, emergency and parking functions may be provided by a single friction brake as long as it can be applied without having power available.”

Question (2): Is plugging considered acceptable in the above case as a “brake”? Can you clarify if “braking methods,” like plugging, are to be considered interchangeable with “brake devices” as defined in B30.2?

Reply (2): Plugging is considered as a “braking means” or a “braking method” since it controls speed. Plugging is not considered as a “brake” or “brake device.” Refer to the definitions for “emergency brake” and “emergency braking.” Paragraph 2-1.9.8(c) requires an emergency brake and therefore plugging is not considered acceptable as a brake.

Question (3): Under B30.2, which of the following brakes would be acceptable on pendant cranes to meet the volume’s intent:

(a) an operational brake that the operator activates at the pendant to independently set the brakes;
(b) an operational brake that automatically sets when the operator removes pressure to the push button;
(c) a fail-safe brake that automatically sets on loss of power (this may be triggered by electrical failure or intentional operator activation of the power-off button); or
(d) other options?

Reply (3): A combination of (b) and (c), as defined by “emergency brake.”

Question (4): Under B30.2, which of the following brakes would be acceptable on remote operated cranes to meet the volume’s intent:

(a) an operational brake that the operator activates at the pendant to independently set the brakes;
(b) an operational brake that automatically sets when the operator removes pressure to the push button;
(c) a fail-safe brake that automatically sets on loss of power (this may be triggered by electrical failure or intentional operator activation of the power-off button); or
(d) other options?

Reply (4): A combination of (b) and (c), as defined by “emergency brake.”

Question (5): Is there any situation in the volume where plugging is a substitute for a brake (service, emergency, etc.), or is plugging basically a speed control method to be used in conjunction with a brake device?

Reply (5): Plugging is a speed control and is not considered a substitute for a brake on floor-, remote-, and pulpit-operated bridge drives. Plugging can be used in conjunction with a brake device.
Question (6): What, if any, implications does the change in words from brake to emergency brake have from the 1967 to 1983 versions?

Reply (6): The referenced paragraph in B30.2.0-1967 is para. 2-1.8.6(c). The word “brake” was changed to “emergency brake” to more adequately define the type of brake required because the single word “brake” was being interpreted in a very arbitrary manner for this type of crane.

**Interpretation: 2-19**

Subject: ANSI/ASME B30.2-1983

Date Issued: March 20, 1990

Question: Is it permissible to use a bridge crane as a means of support for temporary scaffolding as access for installation of ceiling insulation, ductwork, lighting, light electrical, sprinklers, painting, etc., during construction; and for later maintenance work, such as changing light bulbs, painting, light repairs to ceiling insulation, leaky sprinklers, etc.?

Reply: The ANSI/ASME B30.2 volume scope covers only the construction, installation, operation, inspection, and maintenance of overhead and gantry cranes used as cranes. The question asks the Committee to give an opinion outside this scope and on matters that do not concern the volume as written. It should be noted that the volume’s introduction states that serious hazards are exposed by using equipment for a purpose for which it was not intended or designed.

**Interpretation: 2-20**

Subject: ANSI B30.2.0-1976

Date Issued: March 20, 1990

Question: Does B30.2.0-1976 require the inclusion of any type of braking device to stop the trolley from moving along the horizontal I-beam?

Reply: The type of trolley referred to, that runs on the lower flange of an I-beam, is not covered in the volume ANSI B30.2.0-1976. ANSI B30.2.0-1976 covers Top Running Bridge, Multiple Girder Cranes with Top Running Trolleys. The volume that does cover the referenced trolley is ASME/ANSI B30.11-1988. The trolley is defined on p. 5 as “carrier — (also known as trolley) a unit that travels on the bottom flange of a monorail track, jib boom, or bridge girder to transport a load.”

Section 11-1.8, Brakes, does not specifically mention manually operated trolleys but para. 11-1.8.4(d) does address floor- and remote-operated carriers as follows.

“11-1.8.2(e) Brakes for stopping the motion of the carrier or bridge shall have torque capability to stop the carrier or bridge within a distance in ft (m) equal to 10% of the rated load speed in ft/min (m/min) when traveling at full speed with rated load, and with power off.”

“11-1.8.4(d) On all floor- and remote-operated cranes or carriers, a travel brake(s) is not required, provided that, in case of power failure, the travel motion can be returned and stopped within the travel distance specified in para. 11-1.8.2(e). If this requirement cannot be complied with, a brake or noncoasting mechanical drive shall be provided and shall meet the requirements of para. 11-1.8.3.”

A manually operated trolley (carrier) will meet the requirement for stopping distance and therefore a travel brake is not required.
Interpretation: 2-21

Subject: ASME B30.2-1990

Date Issued: July 23, 1990

Question: Paragraph 2-2.2.2 of B30.2 states, “Prior to initial use, all new, extensively repaired, and altered cranes should be load tested by or under the direction of an appointed person and a written report furnished by such person, confirming the load rating of the crane . . . .” Does this imply a need to load test a crane after a one-for-one change of running ropes of the crane?

Reply: After replacing the running ropes of a crane:

(a) the operational test covered in para. 2-2.2.1 must be conducted; and
(b) a qualified person should determine if a rated load test covered in para. 2-2.2.2 is required.

Some of the facts the qualified person will use in making such a determination are the type and extent of repairs or parts replaced; the application or use of the crane; and the type testing (such as proof testing) previously conducted on the parts used for replacement.

Interpretation: 2-22

Subject: ANSI/ASME B30.2-1983

Date Issued: July 23, 1990

Question: Relating to the trolley and bridge brakes which are self-setting, activated by returning the five step controller to neutral, does para. 2-1.9.4(i) mean that the trolley or bridge must stop within the specifications stated every time the lever controller is returned to neutral or does it mean that the brakes provided must be capable to do so but not necessarily each time the controller is returned to neutral?

Reply: Paragraph 2-1.12.4(i) requires that the trolley or bridge stop within the specifications stated every time the controller is returned to neutral. This does not preclude the fact that an operator may restart travel motion before the trolley or bridge comes to a complete stop.
Interpretation: 2-23

Subject: ANSI B30.2.0-1976

Date Issued: July 23, 1990

Question: Is the following interpretation of para. 2-2.2.2 of ANSI B30.2.0-1976 correct?
To apply a 117 ton test load vs. a 125% (146.25 tons) would require a jackdown derating of 80% x 117 tons = 93.6 tons vs. a 97.5 ton melter pick.

Reply: The current edition of the subject volume is ASME B30.2-1990, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist).

Paragraph 2-2.2.2 is entitled Rated Load Test and para. 2-2.2.2(a) states the following: “Prior to initial use, all new, extensively repaired, and altered cranes should be tested and inspected by or under the direction of a designated or authorized person, and a written report be furnished by such person, confirming the load rating of the crane. The load rating should not be more than 80% of the maximum load sustained during the test. Test loads shall not be more than 125% of the rated load, unless otherwise recommended by the manufacturer. The test reports shall be placed on file where readily available to appointed personnel.”

Please note that this paragraph uses the word should at two places.

Section 2-0.2 is entitled Definitions and should is defined as follows: "should — this word indicates that a rule is a recommendation, the advisability of which depends on the facts in each situation."

Therefore, the requirement of a load test or the establishment of a load rating not more than 80% of the maximum load sustained during the test are both recommendations, and the need to conduct such a test or modify load rating criteria is to be reviewed and established by a qualified person.

Interpretation: 2-24

Subject: ASME B30.2-1990

Date Issued: November 6, 1990

Question: With regard to the last part of para. 2-1.13.3(a) which states “or a reset switch or power-on button is operated,” how would a reset switch or a power-on button be equivalent to spring-return controllers or a controller that must be returned to the off position before the motors can be restarted?

Reply: Paragraph 2-1.13.3(a) states the following: “Cranes not equipped with spring-return controllers, spring-return master switches, or momentary contact push buttons shall be provided with a device which will disconnect all motors from the lines in the event of a power failure. This disconnect device shall not permit any motor to be restarted until the controller or master switch is brought to the off position, or a reset switch or power-on button is operated.”

There is no intent in para. 2-1.13.3(a) to show equivalency of a reset switch or a power-on button and spring-return controllers or a controller that must be returned to the off position before the motors can be restarted.

The intent of para. 2-1.13.3(a) is to provide equivalent protection from unexpected crane motion, that following a power failure, and upon resumption of power, crane motion will not occur except under the direction and control of a crane operator. If this is accomplished by the use of a reset switch or power-on button, such items are to be located as part of the controls for the operator.

Therefore, the operator has complete control of all crane motions at the time the operator activates the reset switch or power-on button. It is mandated that the operator return all controls to the off position if the power goes off during operation [see para. 2-3.1.7(i)].
Interpretation: 2-25

Subject: USAS B30.2.0-1967

Date Issued: March 26, 1991

Question (1): In regard to para. 2-1.7.4, are these guards for crane wheels provided to prevent loss of life and limb or are they designed to remove debris from runway rails?

Reply (1): Paragraph 2-1.7.4 of USAS B30.2.0-1967 states the following:
"a. Bridge trucks shall be equipped with sweeps which extend below the top of the rail and project in front of the truck wheels.
b. Trolley trucks should be equipped with similar sweeps."

Section V of the Introduction of USAS B30.2.0-1967 states the following:
"Mandatory rules of this Code are characterized by the use of the word “shall.” If a rule is of an advisory nature it is indicated by the use of the word “should” or is stated as a recommendation.”

Therefore, rail sweeps are required on the bridge trucks and are only of an advisory nature in regards to trolley trucks.

Rail sweeps, when provided, are not considered or intended to be guards. The intent of the rail sweep is to sweep foreign objects off of the rail and away from the wheel to prevent the wheel from striking the object and possibly jumping the rail.

Question (2): In regard to para. 2-1.7.7, if the trolley of a crane is to be running while making repairs and the repairman is in a position where he could inadvertently come in contact with the trolley wheel, shall this wheel be guarded? And if it is to be guarded, would this guard be a rail sweep or some other type of guard?

Reply (2): Subparagraph a. of para. 2-1.7.7 of USAS B30.2.0-1967 states the following:
"a. Exposed moving parts such as gears, set screws, projecting keys, chains, chain sprockets and reciprocating components which might constitute a hazard under normal operating conditions shall be guarded."

The Committee’s intent regarding “normal operating conditions” applies only to moving parts that might accidently be contacted by the operator or assistant in the normal performance of the crane functions. The Committee’s intent was stated by adding definitions for “normal operating conditions” in ANSI B30.2.0-1976.

As stated in the answer to your Question (1), rail sweeps are not considered or intended to be guards.

Since maintenance personnel would have to remove guards and covers or open doors in order to inspect, adjust, or repair devices or components, guards provide no additional protection for such personnel. In fact, the need to remove guards or covers for hazards for inspection and adjustment introduces the possibility of additional hazards for personnel on the floor below if any loose parts should accidently fall from the crane. It must be realized that power to the crane is to be off and locked out before maintenance is performed on the crane. Therefore, whenever any maintenance personnel board a crane with the power on, this crane is no longer operating or performing functions within the scope of its intended original design or USAS B30.2.0-1967.
Interpretation: 2-26

Subject: ASME B30.2.0-1967

Date Issued: August 22, 1991

Question (1): Is it the intent of para. 2-2.1.2(a)(4) that hooks be visually inspected daily, and inspected monthly with signed reports?

Reply (1): Section 2-2.1.2 of ANSI B30.2.0-1967 is titled Frequent Inspection and para. 2-2.1.2(a)(4) states the following:
“(a) Items such as the following shall be inspected for defects at intervals as defined in 2-2.1.1(b)(1) [which states: ‘Frequent Inspection — Daily to monthly intervals.’] or as specifically indicated, including observation during operation for any defects which might appear between regular inspections. Any deficiencies such as listed shall be carefully examined and determination made as to whether they constitute a safety hazard:
(4) Hooks with deformation or cracks. Visual inspection daily; monthly inspection with signed reports. For hooks with cracks or having more than 15 percent in excess of normal throat opening or more than 10 degree twist from the plane of the unbent hook refer to Par. 2-2.3.3(c)(1).”

Paragraph 2-2.3.3(c)(1) states the following:
“Crane hooks showing defects described in 2-2.1.2(a)(4) shall be discarded. Repairs by welding or reshaping are not generally recommended. If such repairs are attempted they shall only be done under competent supervision and the hook shall be tested to the load requirements of 2-2.2.2 before further use.”

In answer to the question, yes, all hooks are subject to the inspection requirements of B30.2. Daily inspections are visual, conducted by operator looking for macro damage without taking measurements or keeping records. The purpose of inspection is to look for deformations and cracks; not inspect hooks that have deformations and cracks.

Question (2): Are hooks inspected “frequently,” and only hooks with deformations or cracks are subject to the visual daily and monthly inspections with signed reports?

Reply (2): No. Hooks with deformations or cracks are subject to hook replacement criteria of B30.2.

Question (3): Is it the intent of para. 2-2.1.2(a)(4) that hooks are not subject to any inspection requirements unless the hooks have deformations or cracks?

Reply (3): No.

Question (4): If the latter is the correct interpretation, then how are the deformations or cracks detected if there are no inspection requirements?

Reply (4): Not applicable since the answer to Question (3) is “no.”

The meaning or intent of some sections or paragraphs of B30.2.0-1967 have been further clarified in subsequent editions of this Standard. Reference to the latest edition, B30.2-1990, is recommended.
Interpretation: 2-27

Subject: ASME B30.2-1990

Date Issued: October 21, 1991

Question (1): Is it the intent of paras. 2-2.1.2, 2-2.1.3, and 2-2.1.4 to recommend NDE as the preferred method to identify deficiencies to preclude catastrophic hook failure?

Reply (1): No. All inspections listed are visual. The result of the visual inspection may indicate that additional inspections are required; however, the Standard does not recommend a preferred method.

Question (2): If so, what interval is recommended by the Committee for NDE of hooks?

Reply (2): Not applicable.

Interpretation: 2-28

Subject: USAS B30.2.0-1967

Date Issued: December 16, 1991

Question: I am requesting what your definition of “good depth perception” would be. Also, what type of test(s) could be used to determine “good depth perception”?

Reply: “Good depth perception” as stated in para. 2-3.1.2c applies to the ability of the operator to properly position the load or load hook in a safe manner during all operating functions as viewed by the operator from the operator’s position in either the cab or pulpit. There is no quantitative test to determine this ability since each operating situation is different and must be analyzed to determine the requirements.

Please be advised that the latest edition of this Standard is ASME B30.2-1990, Overhead and Gantry Cranes.
Interpretation: 2-29

Subject: ASME B30.2-1990

Date Issued: October 18, 1991

Question (1): Regarding para. 2-1.15.1, there is a distinct definition for “crane, pulpit operated” and “crane, remote operated.” Cab and remote operated cranes require a warning device. Does a pulpit operated crane require a warning device?

Reply (1): Yes. The requirements for a pulpit-operated crane are considered the same as for a cab-operated or remote-operated crane. Refer to the definition of pulpit-operated crane.

Question (2): If the reply to Question (1) is yes, shouldn’t para. 2-1.15.1 be revised to read “Cab-, Pulpit-, and Remote-Operated Cranes” in lieu of “Cab- and Remote-Operated Cranes”?

Reply (2): B30 Committee will consider if this should be added in a future addenda to B30.2.

Question (3): If there is a distinct definition for “crane, pulpit operated,” shouldn’t there also be a definition for “normal operating conditions (of pulpit-operated cranes)?

Reply (3): See Reply (2).

Question (4): If the reply to Question (1) is yes, does the warning device have to be mounted on the crane?

Reply (4): No. There are circumstances where the purpose of the warning can best be met by mounting the device off of the crane. This does not preclude mounting the device on the crane.

Question (5): If the reply to Question (4) is no, can the warning device be mounted on the pulpit?

Reply (5): Yes, provided the intended purpose of the warning device is met. Each situation will be different and must be analyzed to verify that the intended warning is heard by personnel that may be in the path of load travel.

Question (6): If the reply to Question (4) is no, can be warning device be mounted on the building?

Reply (6): Yes. See Reply (5).

Question (7): If there is more than one crane operated from the pulpit and the reply to Question (5) is yes, can one warning device be used for more than one crane?

Reply (7): Yes. See Reply (5).

Question (8): If there is more than one crane operated from the pulpit and the reply to Question (6) is yes, can one warning device be used for more than one crane?

Reply (8): Yes. See Reply (5).
Question (9): For cab-operated cranes, does the warning device have to be mounted on the crane?

Reply (9): No, provided the intended purpose of the warning device is met. Each situation will be different and must be analyzed to verify that the intended warning is heard by personnel that may be in the path of load travel.

Question (10): If the reply to Question (9) is no, can the warning device be mounted on the building?

Reply (10): Yes. See Reply (5).

Question (11): If there is more than one cab-operated crane and the reply to Question (10) is yes, can one warning device be used for more than one crane?

Reply (11): Yes. See Reply (5).

Question (12): For remote operated cranes, does the warning device have to be mounted on the crane?

Reply (12): No.

Question (13): If the reply to Question (12) is no, can the warning device be mounted on the remote operator's station?

Reply (13): Yes. See Reply (5).

Question (14): If the reply to Question (12) is no, can the warning device be mounted on the building?

Reply (14): Yes. See Reply (5).

Question (15): If there is more than one crane operated from a remote operator's station and the reply to Question (14) is yes, can one warning device be used for more than one crane?

Reply (15): Yes. See Reply (5).

Question (16): Per para. 2-3.1.7(e), if a warning device is furnished, it shall be activated each time before traveling, and intermittently when approaching workpersons. Can the warning device be used for other functions?

Reply (16): Yes. Paragraph 2-1.15.1 does not limit the warning device from being used for another function or functions. However, if the warning device is used for another function, such use must not jeopardize the intended purpose of the warning device which is to warn persons in the path of load travel.

Question (17): If the reply to Question (16) is yes, can the warning device also be used for signaling distance detection between cranes and/or distance detection between crane and end of runway?

Reply (17): Yes. See Reply (16).
Question (18): If the reply to Question (16) is yes, can the warning device be used for as many functions as desired? For example, sounded per para. 2-3.1.7 plus sounded for distance detected plus sounded for motor overtemperature limit plus sounded for control house overtemperature limit plus sounded for power assist brake pressure lost, etc.

Reply (18): Yes. See Reply (16).

Question (19): If two cranes are electrically coupled to operate by a master operator's station with simultaneous control, do both cranes' warning devices need to be operated or is it sufficient that one warning device is operable?

Reply (19): This question can not be answered since each situation will be different and either method can be acceptable provided the intended purpose of the warning device is met.

Question (20): Regarding para. 2-1.15.2, does the warning device have to be mounted on the crane?

Reply (20): No.

Question (21): If the reply to Question (20) is no, can the warning device be mounted on the building?

Reply (21): Yes. See Reply (5).

Question (22): If there is more than one floor-operated crane and the reply to Question (21) is yes, can one warning device be used for more than one crane?

Reply (22): Yes. See Reply (5).

Question (23): Per para. 2-3.1.7(e), if a warning device is furnished, it shall be activated each time before traveling, and intermittently when approaching workpersons. Can the warning device be used for other functions?

Reply (23): Yes. See Reply (16).

Question (24): If the reply to Question (23) is yes, can the warning device also be used for signaling distance detection between cranes and/or distance detection between crane and end of runway?

Reply (24): Yes. See Reply (16).

Question (25): If the reply to Question (23) is yes, can the warning device be used for as many functions as desired? For example, sounded per para. 2-3.1.7 plus sounded for distance detecting plus sounded for motor overtemperature limit, etc.

Reply (25): Yes. See Reply (16).

Question (26): If two cranes are electrically coupled to operate by a master operator's station with simultaneous control, do both cranes' warning devices need to be operated or is it sufficient that one warning device is operable?

Interpretation: 2-30

Subject: ASME B30.2a-1991

Date Issued: December 16, 1991

Question (1): Please give the definition of “planned engineering lifts” as used in para. 2-3.2.1.1.

Reply (1): “Planned engineering lifts” is a procedure that applies to any lift that is required where the load to be lifted is in excess of the rated load of the crane.

Question (2): Is the definition of “planned engineering lifts” to be considered a job that would entail making more than one pick of a load at over 100% capacity of the crane or is the definition of “planned engineering lifts” to be considered a single lift?

Reply (2): Planned engineering lifts procedures are applicable to a single lift or more than a single lift. As outlined in this Section, if the frequency exceeds two lifts during a continuous 12-month period, the procedure requires review by the crane manufacturer or a qualified person to determine the maximum frequency.

Interpretation: 2-31

Subject: ASME B30.2-1990

Date Issued: January 6, 1992

Question (1): In para. 2-3-2.1.1, what is the maximum allowable overload (beyond rated capacity) without a manufacturer’s engineering review of crane components?

Reply (1): Planned engineering lifts wherein the load to be lifted has an overload in excess of 25% of the rated load of the crane shall require review by the crane manufacturer or a qualified person.

Question (2): In para. 2-3.2.1.1, what is the maximum frequency which over rated load lifts may be performed?

Reply (2): Planned engineered lifts procedures wherein the frequency exceeds two during a continuous 12-month period require review by the crane manufacturer or a qualified person to determine the maximum frequency.
Interpretation 2-32

Subject: USAS B30.2.0-1967

Date Issued: March 23, 1992

Question (1): What is the scope of USAS B30.2.0-1967?

Reply (1): ASA B30.2-1943 and ASA B30.2-1943, reaffirmed 1955, were single standards that covered a broad range of types of material handling equipment.

When the B30 Committee was reorganized in 1962, the intent of the Committee was to develop a single volume for each type of equipment. All volumes would be part of the B30 Standard. Each volume would be numbered B30, decimal point, and a number indicating the volume number.

The first volume published by the reorganized B30 Committee was USAS B30.2.0-1967. The B30.2 number was retained for this first volume with the addition of another decimal point and zero to indicate that it did not replace ASA B30.2-1943. On the cover of this volume, under the USAS B30.2.0-1967 number is stated “partial revision of USAS B30.2-1943.” It was planned to delete the decimal point zero when all volumes were published that would allow the withdrawal of ASA B30.2-1943.

The introduction of B30.2.0-1967 lists nine separate volumes because nine subcommittees were formed and active. This was not intended to imply that only nine volumes were planned. B30.5-1968 lists the same nine volumes. B30.9-1971 lists sixteen volumes.

Section 2-0.1 Scope of B30.2.0-1967 states the following:

“Within the general scope, defined in section 1, B30.2 applies to overhead and gantry cranes, including semi-gantry, cantilever gantry, wall cranes, storage bridge cranes, and others having the same fundamental characteristics. These cranes are grouped because they all have trolleys and similar travel characteristics.”

The five figures on page 6 of B30.2.0-1967 show the same fundamental characteristics for grouping because they have trolleys and similar travel characteristics. All the figures show top-running cranes with integral top-running trolley hoists.

Section 2-0.2 Definitions of B30.2.0-1967 has a subsection 2-0.2.1 covering types of equipment. The definition of “crane” in paragraph 2-0.2.1.1 is a generic definition of cranes covered by this volume and states the following:

“A machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism an integral part of the machine. Cranes whether fixed or mobile are driven manually or by power.”

The other thirteen definitions in Section 2-0.2.1 cover various types or configurations of this generic crane such as automatic crane, cab-operated crane, overhead crane, etc.

Cranes wherein the hoisting mechanism is an integral part of the machine are those having a top-running bridge and a top-running trolley hoist. Top-running single girder cranes or underhung cranes that utilize a separate underhung overhead hoist do not meet the requirements of this definition.

With the publication of B30.2.0-1967, top-running single girder cranes and underhung cranes were still covered by any applicable sections of ASA B30.2-1943.

The title and definitions of B30.2.0-1967 were expanded to aid the user and eliminate any confusion in the minds of the user.

B30.11 covering underhung cranes was first issued in 1973. B30.16 covering overhead hoists was first issued in 1973. B30.17 covering top-running single girder cranes was first issued in 1980. During this time, other volumes were also issued allowing ASA B30.2-1943 to be withdrawn. The decimal point zero was dropped from the volume number with the 1983 edition of B30.2.
Mr. John J. Klocko of the U. S. Department of Labor Occupational Safety and Health Administration was a member of the B30 Committee during this time. In a letter dated February 15, 1972 to Mr. L. West Shea, Managing Director of the Material Handling Institute, Inc. Mr. Klocko states the following:

"This will advise, that our interpretation of OSHA Section 1910.179 Overhead and Gantry Cranes is that 'monorails, monorail cranes, top-running single girder cranes or overhead hoists' are not covered under this section. The source for this section was ANSI B30.2.0 (1967) which does not apply to the above mentioned cranes."

The answer to your question, then, is as follows: B30.2 applies to overhead and gantry cranes, including semi-gantry, cantilever gantry, wall cranes, storage bridge cranes and others having the same fundamental characteristics. These cranes are grouped because they all have trolleys and similar travel characteristics.

Question (2): Can it be construed to cover all overhead and gantry cranes, including those currently covered by ASME B30.2 and B30.11 standards?

Reply (2): No.
Interpretation: 2-33

Subject: ASME B30.2-1990, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: August 21, 1992

Question: Do paras. 2-2.2.2(a)(1) and 2-2.2.2(a)(4) require independent testing of mechanical load brakes, i.e., by overriding the holding brake, on cranes so equipped?

Reply: The paragraphs quoted in your letter are actually paras. 2-2.2.2(b)(1) and 2-2.2.2(b)(4) which state the following:

"(b)(1) Hoist the test load a distance to assure that the load is supported by the crane and held by the hoist brake(s)."

"(b)(4) Lower the test load, and stop and hold the load with the brake(s)."

The answer to your question is no.

Interpretation: 2-34

Subject: ASME B30.2-1990, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: October 6, 1992

Question (1): What is the interpretation of the term “uppermost limit”? 

Reply (1): The term “uppermost limit” is not used in ASME B30.2-1990. Therefore, an interpretation cannot be rendered. The term has not been used in previous editions of the standard, including B30.2-1967, which was the basis for 29CFR1910.179.

However, a power circuit limit device or switch is normally set at a higher point than the upper limit device which is the geared limit switch. The gear limit switch is then the primary upper limit device that the operator shall check prior to initial use on each shift. The power circuit device is checked under periodic inspection.

Question (2): What is the interpretation of inspection under no load?

Reply (2): Inspection under no load means without the live load normally applied in the application. Therefore, in applications using a lifting device as a regular part of the application, inspection under no load includes the lifting device attached to the hoist load hook.
**Interpretation:** 2-35

**Subject:** ASME B30.2-1990, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

**Date Issued:** December 17, 1992

**Question (1):** How can we provide safeguards against an overload?

**Reply (1):** Safeguards can be provided by correctly marking the hoist and crane, and training operators in accordance with the requirements of paras. 2-1.1.1 and 2-3.2.1.

**Question (2):** What markings or warning signs should be provided to alert the operator to the potential overload?

**Reply (2):** The markings, which are required by para. 2-1.1.1 and the training of operators in proper use of the equipment in accordance with requirements, are necessary to alert operators not to overload cranes.

**Question (3):** An example is a large roller weighing approximately 85 tons being lifted by using two 60 ton hoists on a 60 ton bridge. The roller is nearly 80 ft in length. The user felt that this length would spread the load to each end truck since each hoist would be positioned at the ends of the roller.

**Reply (3):** The situation described can best be addressed by the manufacturer of the crane. Eighty-five tons is beyond the 125% of the rated load of 60 tons. Paragraph 2-3.2.1.1(d) requires consulting with the manufacturer for this situation.
**Interpretation: 2-36**

Subject: ASME B30.2-1990, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: September 17, 1993

Question: Does B30.2 allow dual rated load markings?

Reply: Section 2-1.1.1 of ASME B30.2-1990 states the following:

“(a) The rated load of the crane shall be marked on each side of the crane.
(b) If the crane has more than one hoisting unit, each hoist shall have its rated load marked on it or its load block.
(c) Markings on the bridge, trolley, and the load block shall be legible from the ground or floor.”

B30.2 does allow dual rated load markings. Such markings must comply with the requirements of Section 2-1.1.1.

However, prior to applying dual rated load markings on an existing crane, the crane and supporting structure shall be analyzed in accordance with Section 2-1.4.3, Modifications, by a qualified person or manufacturer of cranes.

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**Interpretation: 2-37**

Subject: ANSI/ASME B30.2-1983, Overhead and Gantry Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)

Date Issued: December 20, 1993

Question: Does ANSI/ASME B30.2-1983 apply to a 2-ton capacity telescoping gantry crane which rides on casters rather than a fixed runway?

Reply: There is no B30 standard that covers adjustable gantry cranes operating on casters. However, after the gantry has been adjusted and fixed for a condition of use, whether mounted on casters or fixed track, the crane and its use should comply with applicable sections of applicable B30 standard volumes.

The drawing enclosed with your letter indicates that the trolley to be used is not of the top running type; therefore, B30.2 would not apply. The drawing indicates that an underhung overhead hoist would be used on this type gantry. Therefore, the crane and its use should comply with applicable sections of ASME B30.17, Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist). The hoist used with the crane should comply with applicable sections of ASME B30.16, Overhead Hoists (Underhung).
Interpretation 2-38

Subject: ASME B30.2-1990

Date Issued: December 20, 1994

Question (1): With regard to para. 2-1.3.1(d), is a wind-indicating device required on all outdoor gantry cranes?

\( (d) \) Outdoor storage gantry cranes shall be provided with remotely operated rail clamps or other equivalent devices. Parking brakes may be considered minimum compliance with this rule. A wind-indicating device shall be provided. The device shall give a visible and audible alarm to the crane operator at a predetermined wind velocity.

Reply (1): Paragraph 2-1.3.1(d) of ASME B30.2-1990 states: “A wind-indicating device shall be provided.” The interpretation by the B30 Committee is that this means that a wind-indicating device shall be provided for all gantry cranes that operate on outdoor runways. It should be noted that the wind-indicating device is not required to be mounted on the crane. The performance of the device has improved accuracy when it is mounted in a fixed location where the motion of the crane will not affect the wind speed indicated. Therefore, a single device may serve several cranes that operate on the same runway.

Question (2): If the reply to Question (1) is “No,” what length of span separates an outdoor storage gantry crane from an outdoor gantry crane?

Reply (2): See Reply (1). There are no limits set for length of span or length of runway to determine when a wind-indicating device is required. The device is required for all gantry cranes that operate outdoors.
Interpretation 2-39

Subject: ASME B30.2-1990

Date Issued: June 20, 1995

Question: Paragraph 2-3.2.3(e) addresses the movement of loads over people by a crane controlled by an operator. Would you please address the conditions, requirements, and other particulars that relate to the movement of loads over people by a fully automatic crane?

Reply: Section 2-3.2 of ASME B30.2-1990 is titled “Handling the Load.” Subsection 2-3.2.3 is titled “Moving the Load,” and para. (e) states the following: “The operator should avoid carrying loads over people.” Section 2-0.2 is titled “Definitions,” and the terms “automatic crane” and “should” are defined as follows:

- crane, automatic — a crane which, when activated, operates through a preset cycle or cycles
- should — this word indicates that a rule is a recommendation, the advisability of which depends on the facts in each situation

Since an automatic crane operates through a preset cycle or cycles when activated, the person who controls such activation is the operator of the crane. Therefore, para. (e) applies to all crane types, including automatic cranes.

Paragraph (e) uses the word “should.” Therefore, para. (e) is a recommendation, the advisability of which depends on the facts in each situation. In any crane operation, the movement of loads over people may be necessary and each situation must be evaluated to determine if any additional precautions or warning devices may be required. The concern is not only the load in total that is being moved over people, but also how well the load in total, and any parts of the load that may fall, are made secure to their means of support.

Interpretation 2-40

Subject: ASME B30.2-1990

Date Issued: June 20, 1995

Question: In para. 2-1.12.2(f), it is my understanding that the two-brake requirement is only for hoists that handle hot metal and does not apply to hoists that do not handle hot metal (e.g., secondary auxiliary hoist). Please clarify.

Reply: Paragraph 2-1.12.2(f) states the following:

(f) Each independent hoist unit that hoists molten materials shall have one of the following arrangements.

(1) Two holding brakes (one of which is mounted on a gear reducer shaft) plus control braking means shall be provided. Each brake shall have a torque rating at least equal to the rated load hoisting torque at the point where the brake is applied.

(2) If the hoist has a mechanical load brake or a control braking means that provides emergency braking in the lowering direction on loss of power, only one holding brake is required. The holding brake shall have a torque rating at least equal to 150% of the rated load hoisting torque at the point where the brake is applied.

Paragraph (f) addresses only the hoisting unit or units that hoist molten materials by use of the wording, “Each independent hoist unit that. . . .” Therefore, on cranes having multiple hoisting units, only the hoist or hoists that transport molten materials are subject to the brake requirements of para. 2-1.12.2(f). Auxiliary hoisting units that do not handle molten material on cranes that do handle molten material are not subject to the brake requirements of para. 2-1.12.2(f).
Interpretation 2-41
Subject: ASME B30.2-1990
Date Issued: June 20, 1995

Question (1): Does para. 2-3.1.1(a) indicate that (crane) inspectors are not considered qualified personnel to operate a cab- or pulpit-operated crane?

Reply (1): Section 2-3.1.1 is titled “Operators of Cab-Operated and Pulpit-Operated Cranes,” and para. (a) lists operators as follows:

(a) Cranes shall be operated only by the following qualified personnel:
(1) designated persons;
(2) trainees under the direct supervision of a designated person;
(3) maintenance and test personnel, when it is necessary in the performance of their duties.

Section 2-3.1.2 is titled “Qualifications for Operators of Cab-Operated and Pulpit-Operated Cranes,” and para. (a) states the following:

(a) Operators shall be required by the employer to pass a written or oral examination and a practical operating examination unless able to furnish satisfactory evidence of qualifications and experience. Qualifications shall be limited to the specific type equipment for which examined.

No. A crane inspector may be qualified to operate a cab-operated or pulpit-operated crane provided the inspector meets the requirements of Section 2-3.1.2. Therefore, unless the inspector receives the training and passes the examination in accordance with para. 2-3.1.2(a), the inspector is not qualified to operate a crane.

Question (2): Does para. 2-3.1.1(a) indicate that qualified personnel are required, in addition to a (crane) inspector, to perform the inspection of a cab- or pulpit-operated crane?

Reply (2): Many inspection procedures do not require operation of the crane. However, if the crane must be operated during the inspection procedure being performed, and the crane inspector is not qualified to operate the crane, then yes, a qualified crane operator, in addition to the crane inspector, is required.

Interpretation 2-42
Subject: ASME B30.2b-1992
Date Issued: December 12, 1995

Section 2-2.2 of ASME B30.2b-1992 states the following:

2-2.2.1 Operational Tests. Prior to initial use, all new, reinstalled, altered, repaired, or modified cranes shall be tested by a designated person to insure compliance with this volume, including the following functions:
(a) lifting and lowering;
(b) trolley travel;
(c) bridge travel;
(d) limit switches. The trip setting of hoist limit devices shall be determined by tests with an empty hook traveling in increasing speeds up to the maximum speed. The actuating mechanism of the upper limit device shall be located so that it will trip the device under all
conditions, in sufficient time to prevent contact of the hook or load block with any part of the trolley or crane.

(e) locking, limiting, and indicating devices, if provided.

2-2.2.2 Rated Load Test

(a) Prior to initial use, all new, extensively repaired, and altered cranes should be tested and inspected by or under the direction of a designated or authorized person, and a written report be furnished by such person, confirming the load rating of the crane. The load rating should not be more than 80% of the maximum load sustained during the test. Test loads shall not be more than 125% of the rated load, unless otherwise recommended by the manufacturer. The test reports shall be placed on file where readily available to appointed personnel.

(b) The rated load test, if made, shall consist of the following operations as a minimum requirement.

(1) Hoist the test load a distance to assure that the load is supported by the crane and held by the hoist brake(s).

(2) Transport the test load by means of the trolley for the full length of the bridge.

(3) Transport the test load by means of the bridge for the full length of the runway in one direction with the trolley as close to the extreme right-hand end of the crane as practical, and in the other direction with the trolley as close to the extreme left-hand end of the crane as practical.

(4) Lower the test load, and stop and hold the load with the brake(s).

Section 2-0.2 is titled “Definitions,” and the words “shall” and “should” are defined as follows:

shall — this word indicates that a rule is mandatory and must be followed

should — this word indicates that a rule is a recommendation, the advisability of which depends on the facts in each situation

Question (1): Paragraph 2-2.2.2(a) states that, “Prior to initial use, all new, extensively repaired, and altered cranes should be tested and inspected by or under the direction of a designated or authorized person, and a written report be furnished by such person, confirming the load rating of the crane.”

Is it the understanding that the recommendation to test a crane will be determined by a designated or authorized person?

Reply (1): The determination to load test may be made by anyone who has responsibility over the use of the crane. Such determination is not limited to a designated or authorized person as defined in the Standard.

Question (2): Is it the only intent of this requirement to confirm the rated load of the crane?

Reply (2): No. The intent of the recommendation to load test a crane may include confirming the proper function and operation of the crane and is determined by the facts in each situation.

Question (3): Paragraph 2-2.2.2(a) continues with “The load rating should not be more than 80% of the maximum load sustained during the test.”

Is it a recommendation that the load rating should not be more than 80% of the load sustained during the test?

Reply (3): Yes.

Question (4): Can the load rating be 100% of the maximum load sustained during the test?

Reply (4): Yes, but not more than 100% of the rated load of the crane.
Question (5): Will this still be considered confirmation of the rated load?

Reply (5): Yes.

Question (6): Does the B30.2 volume recommend utilizing the rated load test on an annual basis to assure proper function and operation of the structural, electrical, and mechanical components of the crane?

Reply (6): No. The frequency of load testing a crane may be determined by the facts in each situation.

Question (7): Is the B30.2 volume being satisfied or exceeded if a designated or authorized person decides to perform an annual load test at 100% of the rated capacity, not to confirm the rated capacity, but as part of the periodic inspection to guarantee proper operation of the hoist holding brake and associated mechanical and/or electrical equipment?

Reply (7): Since there is no recommendation to perform a load test as part of the periodic inspection, performing a load test will exceed the requirements of a periodic inspection.

Question (8): Is the B30.2 volume being satisfied if a designated or authorized person decides to test the crane at 100% of the rated capacity after the hoist holding brake has been adjusted or the wire rope has been replaced? Again, this is not considered a confirmation of the rated load. It is viewed as a post maintenance test to assure function and operation of the parts maintained.

Reply (8): The B30.2 volume does not require or recommend 100% load testing of a crane after brake adjustment or wire rope replacement. Any load testing of the crane is a recommendation to be determined by the facts in each situation. Therefore, such testing exceeds the requirements.

Question (9): Does the B30.2 volume require a confirmation of the rated capacity of the entire crane if the wire rope is changed, the hoist motor brake is replaced, the motors are replaced, the eddy current brake is replaced, or the lower block is replaced?

Reply (9): No, assuming that by the words, “the wire rope is changed,” you mean that the wire rope is replaced by a rope of like kind. See the answer to Question (8).

Question (10): Does confirmation that the replaced component can handle the load satisfy the Standard?

Reply (10): Yes.
**Interpretation 2-43**

Subject: ASME B30.2d-1994

Date Issued: June 14, 1996

Section 2-2.2.2 states the following:

2-2.2.2 Rated Load Test

(a) Prior to initial use, all new, extensively repaired, and altered cranes should be tested and inspected by or under the direction of a designated or authorized person, and a written report be furnished by such person, confirming the load rating of the crane. The load rating should not be more than 80% of the maximum load sustained during the test. Test loads shall not be more than 125% of the rated load, unless otherwise recommended by the manufacturer. The test reports shall be placed on file where readily available to appointed personnel.

(b) The rated load test, if made, shall consist of the following operations as a minimum requirement.

1. Hoist the test load a distance to assure that the load is supported by the crane and held by the hoist brake(s).
2. Transport the test load by means of the trolley for the full length of the bridge.
3. Transport the test load by means of the bridge for the full length of the runway in one direction with the trolley as close to the extreme right-hand end of the crane as practical, and in the other direction with the trolley as close to the extreme left-hand end of the crane as practical.
4. Lower the test load, and stop and hold the load with the brake(s).

Section 2-0.2 is titled “Definitions,” and the words “shall” and “should” are defined as follows:

**shall:** this word indicates that a rule is mandatory and must be followed

**should:** this word indicates that a rule is a recommendation, the advisability of which depends on the facts in each situation

Question: There is much confusion in the industry on the interpretation of Section 2-2.2.2. I interpret it as follows:

**EXAMPLE:** 2,000 lb crane (tagged/designated by manufacturer at 1 ton)
Load Test at 125% = 2,500 lb
80% of Test Load = 2,000 lb, Load Rating of Crane

Is this interpretation correct?

Reply: Yes, your interpretation is correct. Two previous interpretations issued by the B30 Committee address the subject of your inquiry. These are Interpretation 2-14, issued March 21, 1988, and Interpretation 2-17, issued September 15, 1989.

The requirement to conduct the rated load test and the magnitude of the test load are both governed by the word “should.” Therefore, the load test or the magnitude of the test load are not mandatory to comply with the Standard. The requirement is a recommendation, the advisability of which depends on the facts in each situation.
**Interpretation 2-44**

Subject: ASME B30.2-1983

Date Issued: December 23, 1996

Question: Paragraph 2-1.12.2(c) states: "Holding brakes on hoists shall be applied automatically when power to the brake is removed." This requirement has remained unchanged dating back to ANSI B30.2.0-1967 which was the source standard for 29CFR1910.179, Overhead and Gantry Cranes. Power to the holding brakes is "removed" when the operator centers the controller, that is, places the controls in the neutral or stop position. Does the word "removed" include loss of power not only to the load (hoist motor) circuit but also to the control circuit?

Reply: In the 1983 edition of ASME B30.2, the subject paragraph was numbered 2-1.9.2(c). The subject paragraph was renumbered 2-1.12.2(c) in the 1990 edition of ASME B30.2. The latest edition of ASME B30.2 was published in 1996, in which the subject paragraph is numbered 2-1.12.1(d). While the wording in the 1996 edition has been changed, the technical intent of the paragraph has not changed. The wording of 2-1.12.1(d) in the 1996 edition is as follows:

(d) Hoist holding brakes shall be applied automatically when power to the brake is removed.

The answer to your question is yes. When power is removed from the hoist control circuit, this will result in power being removed from the hoist power circuit and the hoist holding brake shall be applied automatically.

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**Interpretation 2-44R**

Subject: ASME B30.2-1983

Date Issued: March 7, 1997

Question: Paragraph 2-1.12.2(c) states: "Holding brakes on hoists shall be applied automatically when power to the brake is removed." This requirement has remained unchanged dating back to ANSI B30.2.0-1967 which was the source standard for 29CFR1910.179, Overhead and Gantry Cranes. Power to the holding brakes is "removed" when the operator centers the controller, that is, places the controls in the neutral or stop position. Does the word "removed" include loss of power not only to the load (hoist motor) circuit but also to the control circuit?

Reply: In the 1983 edition of ASME B30.2, the subject paragraph was numbered 2-1.9.2(c). The subject paragraph was renumbered 2-1.12.2(c) in the 1990 edition of ASME B30.2. The latest edition of ASME B30.2 was published in 1996, in which the subject paragraph is numbered 2-1.12.1(d). While the wording in the 1996 edition has been changed, the technical intent of the paragraph has not changed. The wording of 2-1.12.1(d) in the 1996 edition is as follows:

(d) Hoist holding brakes shall be applied automatically when power to the brake is removed.

The answer to your question is yes. When power is removed from the hoist control circuit, this will result in power being removed from the hoist power circuit and the hoist holding brake shall be applied automatically. The word "removed" is applicable to either action by the operator or loss of power.
Interpretation 2-45

Subject: ASME B30.2-1996

Date Issued: March 7, 1997

Paragraph 2-1.13.5(d) states the following:

(d) Power-driven hoist shall be designed and constructed so that the load block, either loaded or empty, shall not exceed the upper limit of travel. On wire-rope hoists, if a geared or other limit switch or device that operates in relation to drum turns is used, an additional limit switch or device that operates independent of drum rotations shall be provided.

Question: Can a rope guide which prevents the overlapping of rope on the drum of a wire rope hoist be considered as an acceptable device to meet para. 2-1.13.5(d)?

Reply: No. The second sentence of the paragraph states: "... an additional limit switch or device that operates independent of drum rotations shall be provided." A rope guide intended to prevent the overlapping of the rope on the drum of a wire rope hoist is dependent on drum rotation to perform its function.

Therefore, the rope guide is not considered an acceptable device to meet the requirements of para. 2-1.13.5(d).
**Interpretation: 2-46**

Subject: ASME B30.2-1996

Date Issued: December 11, 1998

Question (1): With regard to para. 2-1.3.1(d), are a wind-indicating device and rail clamps required on all existing outdoor gantry cranes?

Reply (1): The differentiation between new and existing equipment is addressed under Section IV of the B30 Standard.

Question (2): Is there a cutoff date on an existing crane to which, if no modifications are being done, that none of the requirements in the above subject specification shall apply (i.e., a grandfather clause)?

Reply (2): See Reply (1).
Interpretation: 2-47

Subject: ASME B30.2b-1998

Date Issued: December 10, 1999

Question (1): Paragraph 2-1.5.3 indicates that “access to the cab or bridge walkway shall be by a fixed ladder, stairs, or platform. The ladder shall be in conformance with ANSI A14.3, except as modified to meet the requirements of this volume.”

Paragraph 2-1.7.2(c) states: “Ladders shall be fastened in place and shall be constructed in compliance with ANSI A14.3, except as modified to meet the requirements of this volume.”

Our cranes, built in 1974, are accessed by means of pull-down ladders. The ladders were provided by the original equipment manufacturer and have had a safe record of use in our plant. A safety interlock is included, which prevents crane motion when the ladder is not fully raised. An over-counterweight keeps the ladder retracted. The ladder is 12 in. wide with 250 lb as a limit.

Nowhere is a reference made to the acceptability of pull-down ladders as a means of cab access from the floor. Does a pull-down ladder meet the intent of the B30.2 volume?

Reply (1): Paragraph 2-1.5.3, Access to Crane, applies to means external to the crane that allows the crane operator or other personnel to gain access to the cab or bridge.

Paragraph 2-1.7.2, Ladders and Stairways, applies to ladders and stairways that are an integral part of the crane structure that allow the crane operator or other personnel to gain access between levels of the crane.

When designed in accordance with applicable standards, a pull-down ladder could be part of the external means to gain access to the crane, or to gain access to different levels of the crane. An integral pull-down ladder from the crane to gain direct access from the floor does not meet the basic intent of ASME B30.2; however, when designed in accordance with applicable standards and with provisions that take into account possible hazards associated with a ladder that allows direct access to the cab from the floor, such a ladder could fall under the exception clause of para. 2-1.5.3.

Question (2): Does a pull-down ladder meet the intent of the standards, particularly as they may apply to fall protection and prevention?

Reply (2): See Reply (1). The B30.2 volume does not address fall protection or fall prevention. This subject is covered by other standards. The B30 Committee cannot issue a reply to subjects not covered or addressed in any specific B30 volume.
Interpretation: 2-48

Subject: ASME B30.2b-1998

Date Issued: December 10, 1999

Question (1): Would the following practice suffice under the guidelines prescribed by para. 2-2.1.2? During the course of operation of an overhead traveling crane, it is discovered that the hoist limit switch is malfunctioning. The auxiliary crane servicing that area has been taken out of service for repairs; therefore, the operation of the said crane has been necessitated.

The determination was made to double-man the crane by utilizing the Crane Operator from the other crane as a Spotter. He was instructed to visually insure that the other Operator did not lift any loads into the limit switch. The potential hazard was deemed minimal since there was no need to hoist the block in to close proximity of the limit switch.

Side notes to this issue are as follows:
(a) Pre-shift tests of limit switches are performed by Crane Operators.
(b) The double-manning was halted after repairs were made to the back-up crane.
(c) The limit switch was then repaired to the primary crane.

Reply (1): Paragraph 2-2.1.2, Frequent Inspection, states the following:

(a) Frequent inspection shall include observations during operation.
(b) A designated person shall determine whether conditions found during the inspection constitute a hazard and whether a more detailed inspection is required.
(c) The following items shall be inspected:
   (1) operating mechanisms for proper operation, proper adjustment, and unusual sounds;
   (2) upper limit device(s) in accordance with para. 2-3.2.4(a);
   (3) tanks, valves, pumps, lines, and other parts of air or hydraulic systems for leakage;
   (4) hooks and hook latches (if used) in accordance with ASME B30.10;
   (5) hoist ropes and end connections in accordance with para. 2-2.4.1(a); and
   (6) rope for proper spooling onto the drum(s) and sheave(s).

Paragraph 2-3.2.4, Hoist Limit Devices (Switches), and subparagraph (a) state the following:

Prior to the initial use of any hoist during each shift, the operator shall verify operation of the upper-limit device under no-load conditions. If more than one upper-limit device is present, only the operation of the primary upper-limit device need be verified. Care shall be exercised; the block shall be inched into the limit or run in at slow speed. If the device does not operate properly, the operator shall immediately notify the appointed person.

In Chapter 2-1, General Construction and Installation, para. 2-1.13.5(d) states the following:

Power-driven hoists shall be designed and constructed so that the load block, either loaded or empty, shall not exceed the upper limit of travel. On wire-rope hoists, if a geared or other limit switch or device that operates in relation to drum turns is used, an additional limit switch or device that operates independent of drum rotation shall be provided.

The word shall is defined in Section 2-0.2, Definitions, as follows:

shall: this word indicates that a rule is mandatory and must be followed.

Requirements as stated in the referenced sections or paragraphs, with the use of the word shall, means that an upper-limit device or switch must be functional for the crane to be in compliance with B30.2. The B30.2 volume does not address means for crane operation when a major safety device, such as an upper-limit device or switch is not functional. Therefore, the method you described does not meet the requirements of the B30.2 volume.
Interpretation: 2-49

Subject: ASME B30.2-1996

Date Issued: May 30, 2001

Question (1): When we start our refueling outage we do a complete periodic inspection of the crane and this inspection is performed 2 days to a week before any planned engineering lift is made. The crane is being used after the inspection and prior to the planned engineering lift. In para. 2-3.2.1.1(c)(4) what does “just prior to” mean? Does it mean immediately before the lift or just anytime prior to the lift, even though the crane has been in use after the inspection and prior to the planned engineered lift?

Reply (1): Paragraph 2-3.2.1.1(e)(4), in using the phrase “just prior to,” does not place a time frame between the inspection and the planned engineered lift. It does mean that the crane is not to be used for any other lifting purposes between the time of the inspection and the time of the planned engineered lift.

Question (2): If the answer to the first question is “just anytime prior to making the lift,” would the post/after lift inspection serve as the pre-inspection for a second planned engineered lift of the same piece of equipment that occurs a few weeks later?

Reply (2): No reply is necessary. However, your attention is directed to para. 2-3.2.1.1(c) regarding occurrences of planned engineered lifts.
Interpretation: 2-50

Subject: ASME B30.2-1990, Para. 2-1.12.2(c)
Date Issued: January 16, 2003

Question (1): What is the definition of the term "automatically" as it applies to the following:
(c) "Hoist holding brakes shall be applied automatically when power to the brake is removed"?

Reply (1): In the paragraph referenced, "automatically" is defined by the standard dictionary
definition of the word "automatic". As an example: "capable of operating with little or no external
control or influence," "a machine or apparatus that operates automatically," or "having a self-
acting or self-regulating mechanism."
In this paragraph, "automatically" applies to the application of the brake and is intended to
mean that, upon loss of power, the brake shall set by itself, without requiring external intervention.

Question (2): Does the term "automatically" imply "immediately"?

Reply (2): No.

Question (3): Please provide any guidelines or recommendations for stopping distance on hoist
braking systems upon loss of power.

Reply (3): ASME B30.2 does not list or address stopping distances for hoist brakes. Therefore,
the B30 Committee cannot offer interpretations or recommendations for material that does not
appear in this volume.
Stopping distance is determined by the overall design of the hoisting machine as determined
by the hoist manufacturer. We recommend you contact the manufacturer of the hoist regarding
this subject.

Interpretation: 2-51

Subject: ASME B30.2-1990, Paras. 2-2.1.1(b)(2) and 2-2.1.3(b)(2)
Date Issued: January 15, 2004

Question (1): Does Section 2-2.1.1(b)(2) apply to the crane and runway?

Reply (1): Yes.

Question (2): Is the runway inspection intended to include the support structure to the ground?

Reply (2): Yes.
Interpretation: 2-52

Subject: B30.2-2001, Para. 2-3.2.1.1, Planned Engineered Lifts

Date Issued: May 26, 2004

Question: In order to perform maintenance on a piece of equipment that is in excess of the rated capacity of our overhead crane, the following process will be used:
   1) Load will be lifted to test brakes.
   2) Load is set down to adjust sling balance.
   3) Load is lifted and moved to an inspection stand.
   4) Load is lifted and moved to vehicle for transport to maintenance shop.
   5) Upon return from maintenance shop (approx. 1 week) load is lifted to test brakes.
   6) Load is set down to adjust slings.
   7) Load is lifted and moved to inspection stand.
   8) Load is lifted and moved back into place.

   Under the provisions of Section 2-3.2.1.1, does the above process constitute one (1) Planned Engineered Lift, two (2) Planned Engineered Lifts, four (4) Planned Engineered Lifts, or six (6) Planned Engineered Lifts?

   Reply: The process you have described would constitute four (4) or six (6) lifts in excess of the crane's rated capacity, depending on the details of your process. All of the provisions of para. 2-3.2.1.1 must be followed for a lift to be considered a “planned engineered lift” and this section limits this type of lift to two (2) in any 12 month period without consulting the crane manufacturer.
Interpretation: 2-53


Date Issued: September 26, 2005

Background: The following statement appears in para. 2-1.14.3 of ASME B30.2, para. 11-3.2.3 of ASME B30.11, and para. 16-1.2.6 of ASME B30.16.

“No Less than two wraps of rope shall remain on the drum at each anchorage of the hoist(ing) drum when the hook is in its extreme low position unless a lower-limit device is provided, in which case no less than one wrap shall remain."

Question (1): When the hook is in its “extreme low position,” does this mean that the hook is at its lowest point of travel when all of the rope has been unwound, except for the required wraps?

Reply (1): Yes.

Question (2): When the hook is in its “extreme low position,” does this mean that the hook must be capable of traveling all the way to the ground with no load?

Reply (2): No.

Interpretation: 2-54

Subject: ASME B30.2-1996, Section 2-0.2 Definitions

Date Issued: January 20, 2006

Background: The definition of crane service, heavy, states, “service that involves operating at 85 to 100% of rated load or in excess of 10 lift cycles/hr as a regular specified procedure."

Question: Should a crane that has a rated capacity of 85 tons and performs one lift of 80 tons an average of once per month, and also performs one lift of 45 tons an average of every two weeks, be classified heavy service based upon the definition?

Reply: No. The service the crane is performing as described is in accordance with the definition of normal service, not heavy service, as long as the crane is not handling more than one lift of 80 tons an average of once per month and a 45 ton lift an average of every two weeks.
Interpretation: 2-55

Subject: ASME B30.2-2001, Paras. 2-3.2.3(a)(2) and 2-3.2.3(g)

Date Issued: January 20, 2006

Background: Paragraph 2-3.2.3(a)(2): The appointed person directing the lift shall ascertain that the load is secured, balanced, and positioned in the hook, sling or lifting device before the load is lifted more than a few inches (millimeters).

Paragraph 2-3.2.3(g): The operator shall check the hoist brake(s) at least once each shift if a load approaching the rated load is to be handled. This shall be done by lifting the load a short distance and applying the brake(s).

Question (1): Is the load lifted off the ground a short distance and then stopped in order to check the stability before proceeding with the lift, or is the procedure to tighten the rigging first, make sure the load is secure, balanced and positioned in the hook, sling or lifting device before the load comes off the ground and then start the lift and evaluate the load's stability as it is being lifted and traveled down the floor?

Reply (1): Paragraph 2-3.2.3(a)(2) does not require the lift to be stopped after it has been raised a few inches in order to check stability. It is a continuous process where the stability is evaluated during the first few inches and the lift is stopped only if a stability problem exists. Otherwise the lift continues. In the second scenario, even though the rigging may be tight and the load secured, it is not always possible to determine if the load is balanced while it is still on the ground.

Question (2): Are the requirements in paras. 2-3.2.3(a)(2) and 2-3.2.3(g) separate and distinct?

Reply (2): Yes. As stated in Reply (1), para. 2-3.2.3(a)(2) does not require that every lift be stopped. Therefore, it cannot be used to satisfy the requirement of para. 2-3.2.3(g).

Question (3): Can a specific or approximate distance be associated with the phrase, “lifted more than a few inches”?

Reply (3): No. It could be hazardous to try to meet a specific distance of lift in lieu of watching the balance and stability of the load. Also, in many cases the crane operator is the sole individual involved with the lift and it would be virtually impossible for him to lift to a specific height.
Interpretation: 2-56

Subject: ASME B30.2-2005, Crane Runways, Paras. 2-1.3.2, 2-1.4.3, and 2-2.2.2
Date Issued: September 21, 2006

Question (1): Does the standard require a load test for a modified runway structure that results in no runway capacity increase and no crane modification or capacity rating change? An example would be removing a runway column and installing a two column bent resulting in a load path change.

Reply (1): No, there is no requirement for load testing of the runway in the B30.2 volume.

Question (2): Does the standard require a load test for a modified runway structure that results in a runway capacity increase and no crane modification or capacity rating change? An example would be a two-crane runway to allow a third crane to be installed on the same runway.

Reply (2): No, there is no requirement for load testing of the runway in the B30.2 Volume.

Interpretation: 2-57

Subject: ASME B30.2-2005, Overhead and Gantry Cranes, Para. 2-1.13.5
Date Issued: July 7, 2008

Question (1): Does the standard permit the breaker to be on the ground floor?
Reply (1): Yes.

Question (2): Does the standard require a breaker or switch to be on each operating floor?
Reply (2): No.

Question (3): Does the standard permit the breaker or switch to be on just one operating floor?
Reply (3): Yes.

Note: This provision is consistent with ANSI/NFPA-70, the National Electrical Code.
Interpretation: 2-58

Subject: ASME B30.2-2005, Para. 2-2.1.1, Section 2-1.3, and Para. 2-2.2.1

Date Issued: June 10, 2009

Question (1): What are the requirements for testing the weighted upper final limit switch?

Reply (1): The requirements for testing the secondary weighted upper limit switch are given in para. 2-2.1.3(b)(10) for periodic inspection and paras. 2-2.2.1(b)(4)(a) and (b) for new, reinstalled, altered, repaired and modified cranes.

Question (2): Does ASME B30.2 require testing of a weighted upper final limit switch with the hoist at full speed?

Reply (2): For periodic inspection under para. 2-2.1.3(b)(10), the answer is “no.” For new, reinstalled, altered, repaired, and modified cranes in paras. 2-2.2.1(b)(4)(a) and (b), the answer is “yes.”

Question (3): Does ASME B30.2 require testing of a weighted upper final limit switch with the primary geared limit switch disabled?

Reply (3): For both periodic inspection under para. 2-2.1.3(b)(10) and for new, reinstalled, altered, repaired, and modified cranes in paras. 2-2.2.1(b)(4)(a) and (b), the answer is “yes.”

Question (4): How often should the weighted upper final limit switch be tested?

Reply (4): The secondary weighted upper final limit switch shall be inspected according to the periodic inspection frequency requirements in para. 2-2.1.1(b)(2). For new, reinstalled, altered, repaired, and modified cranes, it shall be inspected according to para. 2-2.2.1(a).

Question (5): Are the testing requirements for the weighted upper final limit switch different for DC cranes as compared to AC frequency drive cranes?

Reply (5): No.
Interpretation: 2-59

Subject: B30.2-2005, Para. 2-3.1.7(f), Conduct of Operators
Date Issued: October 28, 2009

Background: Our situation is a lift was not able to be completed, placing the load back was deemed more hazardous. Our solution was to leave the overhead crane connected to the load. Due to balance concerns the load was placed on the ground but not all the weight loaded to the floor (25 tons on the crane 10 tons on the floor) and we didn’t have enough time to do the job we couldn’t leave a crane operator in the cab.

Question (1): Since we had contact with the floor have we landed the load?
Reply (1): No.

Question (2): Does all of the weight have to be loaded to the floor in order for the item to be considered landed?
Reply (2): Yes.

Interpretation: 2-60

Subject: B30.2-2005, Para. 2-2.2.2(d), Load Test
Date Issued: January 28, 2010

Background: Your request for interpretation refers to wording last included in para. 2-2.2.2 Rated Load Test of ANSI B30.2-1976 edition. The current wording in ASME B30.2-2005, para. 2-2.2.2(d) states, “If a load test is conducted, the load shall be not less than 100% of the rated load of the crane or hoist(s), whichever governs; or more than 125% of the rated load of the crane or hoist(s), whichever governs; unless otherwise recommended by the manufacturer or a qualified person.” Based on the current wording our response to your inquiry is as follows:

Question (1): Can a load test be conducted using test weights equal to 100% of the rated capacity?
Reply (1): Yes.

Question (2): If the test weights are 100% of the rated capacity can the load rating be certified at 100% of the test weights/rated capacity?
Reply (2): ASME does not certify any activity, however the load rating can be verified at 100% of the rated capacity.