



U.S. DEPARTMENT OF LABOR

Occupational Safety and Health Administration

[Docket No. OSHA-2011-0054]

Proposed Revocation of Permanent Variances

AGENCY: Occupational Safety and Health Administration (OSHA), Department of Labor.

ACTION: Notice.

SUMMARY: Between 1975 and 1977, the Occupational Safety and Health Administration ("OSHA" or "the Agency") granted permanent variances to 24 companies engaged in the construction of cylindrical steel tanks. The variances specified several conditions that served as an alternative means of compliance to the falling-object-protection and fall-protection requirements of the standard on general requirements for scaffolds in effect during this period. In 1996, OSHA revised §1926.451 to include provisions that duplicated the conditions specified by these variances. Therefore, OSHA believes the alternative means of compliance granted by the variances is no longer necessary, and is proposing to revoke the variances.

DATES: Submit comments and requests for a hearing (postmarked, sent, or received) by **[INSERT DATE 45 DAYS AFTER PUBLICATION OF THIS NOTICE IN THE FEDERAL REGISTER]**. Hearing requests must provide a short and plain statement detailing (1) how the proposed revocation would affect the requesting party, and (2) what the requesting party would seek to show on the subjects or issues involved.

ADDRESSES: Electronic. Submit comments and requests for a hearing electronically at <http://www.regulations.gov>, which is the Federal eRulemaking Portal. Follow the instructions online for submitting comments.

Facsimile. OSHA allows facsimile transmission of comments that are 10 pages or fewer in length (including attachments), as well as hearing requests. Send these comments and requests to the OSHA Docket Office at (202) 693-1648; hard copies of these comments are not required. Instead of transmitting facsimile copies of attachments that supplement their comments (e.g., studies and journal articles), commenters may submit these attachments, in triplicate hard copy, to the OSHA Docket Office, Technical Data Center, Room N-2625, OSHA, U.S. Department of Labor, 200 Constitution Ave., NW., Washington, DC 20210. These attachments must clearly identify the sender's name, date, subject, and docket number (i.e., OSHA-2011-0054) so that the Agency can attach them to the appropriate comments.

Regular mail, express delivery, hand (courier) delivery, and messenger service. Submit three copies of comments and any additional material (e.g., studies and journal articles), as well as hearing requests, to the OSHA Docket Office, Docket No. OSHA-2011-0054, Technical Data Center, Room N-2625, OSHA, U.S. Department of Labor, 200 Constitution Ave., NW., Washington, DC 20210; telephone: (202) 693-2350. Please contact the OSHA Docket Office at (202) 693-2350 for information about security procedures concerning the delivery of materials by express delivery, hand delivery, and messenger service. The hours of operation for the OSHA Docket Office and Department of Labor are 8:15 a.m. to 4:45 p.m., e.s.t.

Instructions. All submissions must include the organization's name and the OSHA docket number (i.e., OSHA Docket No. OSHA-2011-0054). OSHA places comments and other materials, including any personal information, in the public docket without revision, and these materials may be available online at <http://www.regulations.gov>. Therefore, the Agency cautions commenters about submitting statements they do not want made available to the public, or submitting comments that contain personal information (either about themselves or others) such as Social Security numbers, birth dates, and medical data.

Docket. To read or download submissions or other material in the docket, go to <http://www.regulations.gov> or to the OSHA Docket Office at the address above. All documents in the docket are listed in the <http://www.regulations.gov> index; however, some information (e.g., copyrighted material) is not publicly available to read or download through this website. All submissions, including copyrighted material, are available for inspection and copying at the OSHA Docket Office.

FOR FURTHER INFORMATION: General information and press inquiries. Contact Frank Meilinger, Director, OSHA Office of Communications, Room N-3647, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone: (202) 693-1999.

Technical information. Contact Stefan Weisz, Office of Technical Programs and Coordination Activities, Room N-3655, OSHA, U.S. Department of Labor, 200 Constitution Avenue, NW., Washington, DC 20210; telephone: (202) 693-2110; fax: (202) 693-1644.

Copies of this Federal Register notice. Electronic copies of this notice are available at <http://www.regulations.gov>. Electronic copies of this notice, as well as news releases and other relevant information, are available on OSHA's Web site at <http://www.osha.gov>.

SUPPLEMENTARY INFORMATION:

I. Background

OSHA's general requirements for scaffolds used in the construction industry are set forth at 29 CFR 1926.451. OSHA adopted this standard from Section 107 of the Contract Work Hours and Safety Standards Act (Construction Safety Act) (40 U.S.C. 3704) under Section 6(a) of the Occupational Safety and Health Act of 1970 (OSH Act; 29 USC 651, 655) in 1971 (see 36 FR 7340). Paragraphs (a)(4) and (a)(5) of §1926.451 required employers to erect, on scaffolds more than 10 feet above the ground or floor, toeboards having a minimum height of four inches on all open sides and open ends of the platforms. These requirements prevented tools and other equipment from falling from the scaffold and striking employees below. To ensure the structural integrity of scaffolds, §1926.451(a)(5) required employers to erect guardrail supports at intervals not to exceed eight feet, while Table L-3 in §1926.451(a)(10) set maximum permissible spans for 2- x 10-inch (or wider) planks.

Between 1975 and 1977, OSHA granted 24 permanent variances from the falling-object-protection and fall-protection requirements in §1926.451(a)(4), (a)(5), and (a)(10) to employers using scaffolds in the construction of cylindrical steel tanks. Construction of these tanks involves attaching curved steel plates together to form the outer surface of a tank. After attaching a horizontal layer (ring) of steel plates around the

circumference of the existing shell, employees raise the scaffolds to attach the next ring of steel plates onto the existing shell. Steel mills typically fabricate the steel plates to a standard length. After delivery of the steel plates to a worksite, and prior to attaching the plates to form the outer surface of a tank, employers attach scaffolding and guardrail supports to brackets welded onto the steel plates. The standard length and radius of the steel plates makes it difficult for employers to properly space scaffolding and guardrail supports as specified by §1926.451. To address this problem, employers developed special procedures and methods, including special scaffolding that is more mobile, flexible, and holds fewer workers than conventional scaffolding.

A. *Alternative Means of Compliance Specified in the 24 Variances*

The variances OSHA granted to the 24 employers did not require scaffolds used in the construction of cylindrical steel tanks to have the toeboards required by §1926.451(a)(4) and (a)(5). Instead, the variances specified that the employers must implement the following conditions as an alternative means of compliance: (1) ensure that employees keep loose tools and equipment in secure, well designed, containers; and (2) use ropes to demarcate the area below the scaffold and post clearly visible signs indicating “overhead work above.” The variances also stated that no more than three employees could work on a 10½-foot plank at any time.

Since the contour of the steel plates on a tank’s outer surface is curved, and the adjacent edge of the scaffold is straight, there is an open space between them. As a result, the variances provided for the installation of a taut wire rope between the innermost edge of the scaffold and the curved plate of a tank’s outer surface to serve as a safety line in place of a guardrail assembly. In the event the open space on either side of

the rope exceeded 12 inches, the employer had to install a second wire rope or guardrail. Also, the variances set 10½ feet as the maximum distance between brackets used to attach scaffolding and guardrail supports, and stated that employers had to weld such brackets to the steel plates.

Additionally, the variances required employers to use scaffold planks of rough full-dimensioned 2-inch x 12-inch x 12-foot Douglas Fir or Southern Yellow Pine of Select Structural Grade. The Douglas Fir planking had to have at least a 1,900 fiber stress and 1,900,000 modulus of elasticity, while the Yellow Pine planking had to have at least 2,500 fiber stress and 2,000,000 modulus of elasticity. Employers had to secure all planking from movement or overlapped in accordance with §1926.451(a)(12). The variances also required that employers construct guardrails of taut wire rope, and support the guardrails using angle irons attached to brackets welded to the steel plates. These guardrails had to be at least equivalent in strength, stability, and height to the 2-inch x 4-inch x 8-foot wooden rails addressed in §1926.451(a)(5). Finally, the variances provided that employers space guardrail supports at intervals no greater than 10½ feet apart.

B. OSHA's Current Standard

On August 30, 1996, OSHA issued a final rule revising its construction safety standards regulating the design, construction, and use of scaffolds (61 FR 46026). In the preamble to the final rule, OSHA stated that it was updating its scaffold standards and, when possible, establishing performance-oriented criteria to protect employees from scaffold-related hazards such as falls, falling objects, structural instability, electrocution, and overloading. OSHA also explained that it was not issuing specific requirements for the tank-building industry because the Agency believed it addressed adequately the

requirements for tank scaffolds under the general provisions of this final rule (see 61 FR 46033). In this regard, the final rule revised the requirements in §1926.451(a)(4), (a)(5), and (a)(10). These revisions are set forth in §1926.451, as well as non-mandatory Appendix A of 29 CFR 1926, subpart L.

OSHA's current standard at §1926.451(h) addresses the protection of employees from scaffold-related falling-object hazards. Section 1926.451(h)(1) requires employers to ensure that employees working on scaffolds wear hardhats, and to protect these employees from falling hand tools, debris, and other small objects. Section 1926.451(h)(2) sets forth several options for employers to use to prevent tools, materials, or equipment from falling from a scaffold and striking employees below. Paragraphs (h)(2)(i), (ii), (iii), (iv), and (v) of §1926.451 specify these options, respectively, as follows: (1) using barricades on lower levels to exclude employees from areas where falling objects might land; (2) erecting toeboards along the edge of platforms for a distance sufficient to protect workers below, when the platforms are more than 10 feet above lower levels; (3) erecting paneling or screening when tools or other materials piled on the platform reach a height higher than the top edge of a toeboard; (4) installing a guardrail system designed so that the openings will prevent the passage of falling objects; and (5) installing debris nets, catch platforms, or canopies to protect workers below scaffolds from falling objects.

Appendix A to subpart L addresses scaffold specifications, and provides non-mandatory guidance to assist employers in complying with the requirements in subpart L. Paragraph (z) of this appendix provides guidance regarding the use of tank builder's scaffolds. In the preamble to the 1996 final rule, OSHA noted that the introductory text

of the appendix clearly indicates that employers following the appendix will be in compliance with the requirements of the standard that pertain to scaffolds used in the construction of cylindrical tanks. However, OSHA stated further that employers choosing not to follow the appendix still must comply with applicable requirements in §1926.451, particularly paragraphs (a) and (f) (see 61 FR 46033).

Paragraph (z)(1) of the appendix states that the maximum distance between the brackets used to attach the scaffolding and guardrail supports shall be no more than 10½ feet, while paragraph (z)(2) provides that no more than three employees shall occupy a 10½-foot scaffolding plank at any time. Paragraph (z)(3) requires that employers install a taut wire or synthetic rope supported on the scaffold brackets at the scaffold-plank level between the innermost edge of the scaffold platform and the curved plates of the tank's outer surface to serve as a safety line in place of an inner guardrail assembly when the space between the scaffold platform and the tank exceeds 12 inches. If the space on either side of the rope exceeds 12 inches, employers must install a second wire or synthetic rope in an appropriate location, or install guardrails in accordance with §1926.451(e)(4), to reduce the open space to less than 12 inches.

Additionally, paragraph (z)(4) provides that employers must use scaffold planks of rough full-dimensioned 2- x 12-inch Douglas Fir or Southern Yellow Pine of Select Structural Grade. Douglas Fir planks must have a fiber stress of at least 1,900 lb/m² and a modulus of elasticity of at least 1,900,000 lb/m², while Yellow Pine planks must have a fiber stress of at least 2,500 lb/m² and a modulus of elasticity of at least 2,000,000 lb/m². Finally, paragraph (z)(5) states that employers must construct guardrails of a taut wire or synthetic rope, and support these guardrails using angle irons attached to brackets welded

to the steel plates. These guardrails shall comply with §1926.451(e)(4), and employers must space the guardrail supports at intervals no greater than 10½ feet apart.

The following table compares the conditions specified in the 24 variances with the analogous paragraphs of the current §1926.451.

Variance Condition	Provision in Current §1926.451 and Appendix A of 29 CFR 1926, Subpart L
<u>Condition (1) or (a)</u> : The applicants' loose tools and equipment shall be kept in well-designed tool containers. This does not include fitup bars, key plates, key channels, or long handled mauls which may be placed on the scaffold plank during the time they are required for work. The loose tool containers shall be secured to prevent their upset or dislodgment from the scaffold area.	<u>1926.451(h)(1)</u> : In addition to wearing hardhats each employee on a scaffold shall be provided with additional protection from falling hand tools, debris, and other small objects through the installation of toeboards, screens, or guardrail systems, or through the erection of debris nets, catch platforms, or canopy structures that contain or deflect the falling objects. When the falling objects are too large, heavy or massive to be contained or deflected by any of the above-listed measures, the employer shall place such potential falling objects away from the edge of the surface from which they could fall and shall secure those materials as necessary to prevent their falling.
<u>Condition (2) or (b)</u> : Areas beneath and far enough away from the base of the scaffold to contain anything that falls from above shall be roped off and posted with clearly visible signs stating: "Danger Overhead Work."	<u>1926.451(h)(2)(i)</u> : The area below the scaffold to which objects can fall shall be barricaded, and employees shall not be permitted to enter the hazard area.
<u>Condition (3) or (c)</u> : The space between the innermost edge of the scaffold platform and the curved plate structure of the tank shell shall not exceed 12" without protective measures. A taut wire rope supported on scaffold brackets at plank level may be used to divide any space exceeding 12" in lieu of using a guardrail or tie-off system.	<u>1926.451Appendix A (z)(3)</u> : A taut wire or synthetic rope supported on the scaffold brackets shall be installed at the scaffold plank level between the innermost edge of the scaffold platform and the curved plate structure of the tank shell to serve as a safety line in lieu of an inner guardrail assembly where the space between the scaffold platform and the tank exceeds 12 inches (30.48 cm). In the event the open space on either side of the rope exceeds 12 inches (30.48 cm), a second wire or synthetic rope appropriately placed, or

Variance Condition	Provision in Current §1926.451 and Appendix A of 29 CFR 1926, Subpart L
	guardrails in accordance with 1926.451(e)(4), shall be installed in order to reduce that open space to less than 12 inches (30.48 cm).
<u>Condition (4) or (d)</u> : Not more than three employees shall be working on a 10' 6" span of scaffold planking at any time.	<u>1926.451 Appendix A (z)(2)</u> : Not more than three employees shall occupy a 10 feet 6 inch span of scaffold planking at any time.
<u>Condition (5) or (e)</u> : The maximum distance between brackets to which scaffolding and guardrail supports are attached shall be 10' 6". These brackets shall be welded to the steel plates.	<u>1926.451 Appendix A (z)(1)</u> : The maximum distance between brackets to which scaffolding and guardrail supports are attached shall be no more than 10 feet 6 inches.
<u>Condition (6) or (f)</u> : Scaffold planks or rough full-dimensioned 2" X 12" X 12' Douglas Fir or equivalent planking, shall be used. The Douglas Fir shall have at least a 1,900 fiber stress and 1,900,000 modulus of elasticity. Three planks with full thickness 2" X 10" X 12' dimensions may be used in lieu of two 2" X 12" X 12' planks provided that they are clamped or bonded together at the midpoint of the span in order to spread the weight of the employees.	<u>1926.451 Appendix A (z)(4)</u> : Scaffold planks of rough full-dimensioned 2-inch (5.1 cm) x 12-inch (30.5 cm) Douglas Fir or Southern Yellow Pine of Select Structural Grade shall be used. Douglas Fir planks shall have a fiber stress of at least 1900 lb/in ² (130,929 n/cm ²) and a modulus of elasticity of at least 1,900,000 lb/in ² (130,929,000 n/cm ²), while Yellow Pine planks shall have a fiber stress of at least 2500 lb/in ² (172,275 n/cm ²) and a modulus of elasticity of at least 2,000,000 lb/in ² (137,820,000 n/cm ²).
<u>Condition (7) or (g)</u> : All planking shall be secured from movement or overlapped in accordance with 1926.451(a)(12).	<u>1926.451(f)(15)(ii)</u> : The platform units shall be secured to the scaffold to prevent their movement;
<u>Condition (8) or (h)</u> : Guardrails shall be constructed of taut wire rope, and shall be supported by angle irons attached to brackets welded to the steel plates. These guardrails shall be at least of equivalent strength, stability and height as those required for the 8 foot span of 2" X 4" wood rails by 29 CFR 1926.451(a)(15). Guardrail supports shall be located at no greater than 10' 6" intervals.	<u>1926.451 Appendix A (z)(5)</u> : Guardrails shall be constructed of a taut wire or synthetic rope, and shall be supported by angle irons attached to brackets welded to the steel plates. These guardrails shall comply with §1926.451(e)(4). Guardrail supports shall be located at no greater than 10 feet 6 inch intervals.

Based on the comparisons in this table, OSHA finds that current §1926.451 and Appendix A to 29 CFR 1926, subpart L, which replaced the standards from which the

employers received the variances, substantially duplicate the conditions specified by these variances, and that the current standards and the variances impose equivalent compliance burdens on employers. Accordingly, the current §1926.451 and its associated appendix provide employees with protection that is at least equal to the protection afforded to them by the conditions specified by the variances. Therefore, OSHA is proposing to revoke the variances and require that the employers comply instead with the appropriate provisions of §1926.451 and Appendix A to 29 CFR 1926, subpart L.

The following table provides information about the variances proposed for revocation by this notice; interested parties may refer to the *Federal Register* cite in the table to obtain detailed information about the variances.

Name of Employer (Company)*	Variance No.	Date Granted	Federal Register Cite	OSHA Standards Affected**
American Bridge Division, United States Steel Corp.	V-74-44 V-74-57	05/06/75	40 FR 19715	1926.451(a)(4), (5), and (10)
Baker Tank Company	V-77-7 V-77-1	08/09/77	42 FR 40269	1926.451(a)(4), (5), and (10)
Bethlehem Steel Corporation, Fabricated Steel Construction Division	V-74-44 V-74-57	05/06/75	40 FR 19715	1926.451(a)(4), (5), and (10)
Brown Minneapolis Tank and Fabricating Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Caldwell Tanks, Inc.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Chattanooga Boiler & Tank Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)

Name of Employer (Company)*	Variance No.	Date Granted	Federal Register Cite	OSHA Standards Affected**
Chicago Bridge & Iron Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Edwards Tank Erection, Inc.	V-76-4 V-76-5	09/24/76	41 FR 41976	1926.451(a)(4), (5), and (10)
Fisher Tank and Welding Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
General American Transportation Corporation	V-75-35	04/27/76	41 FR 17642	1926.451(a)(4), (5), and (10)
Gorbett Brothers, Inc.	V-75-35	04/27/76	41 FR 17642	1926.451(a)(4), (5), and (10)
Graver Tank & Manufacturing Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Marathon Steel Co. (formerly Allison Steel Manufacturing Co.)	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Newport News Industrial Corporation of Ohio	V-76-4 V-76-5	09/24/76	41 FR 41976	1926.451(a)(4), (5), and (10)
Nooter Corp.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Pittsburgh-Des Moines Steel Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Prairie Tank and Construction Company	V-75-35	04/27/76	41 FR 17642	1926.451(a)(4), (5), and (10)
PSF Industries, Inc.	V-74-44 V-74-57	05/06/75	40 FR 19715	1926.451(a)(4), (5), and (10)
Richmond Engineering Company, Inc.	V-77-7 V-77-1	08/09/77	42 FR 40269	1926.451(a)(4), (5), and (10)
Tank Services, Inc.	V-75-35	04/27/76	41 FR 17642	1926.451(a)(4), (5), and (10)
The Bishopric Products, Co.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Universal Tank & Iron Works	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)

Name of Employer (Company)*	Variance No.	Date Granted	Federal Register Cite	OSHA Standards Affected**
Western Petro-Chem. Services, Inc.	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)
Wyatt, Division U.S. Industries	V-73-31 V-74-30	04/04/75	40 FR 15139	1926.451(a)(4), (5), and (10)

*As listed on the original variance.

**From OSHA's original scaffold standard issued in 1971.

II. State Plan States

Twenty-two states administer OSHA-approved occupational safety and health programs, or State Plans, that have jurisdiction over private-sector employers within the state. These states are Alaska, Arizona, California, Hawaii, Indiana, Iowa, Kentucky, Maryland, Michigan, Minnesota, Nevada, New Mexico, North Carolina, Oregon, Puerto Rico, South Carolina, Tennessee, Utah, Vermont, Virginia, Washington, and Wyoming. OSHA granted the 24 variances at issue under Federal authority with nationwide applicability, without reference to the State Plans. Subsequently, each State Plan state assumed responsibility for most occupational safety and health activities in the state, including enforcement, standards development, and granting variances. Accordingly, each State Plan state adopted state scaffolding standards that are identical to, or at least as effective as, the current Federal standard at 29 CFR 1926.451. If OSHA revokes the variances described herein, affected employers operating in one or more of these State Plan states must determine if the applicable state standards are identical to, or different from, OSHA's. These companies must meet any state-specific requirements in these standards, or apply directly to the State Plan Office for a variance from the state standard. Information on State Plans is available on OSHA's Web site at

<http://www.osha.gov/dcsp/osp/index.html>, and includes links to each state's Web site, as well as information on state-specific standards.

III. Authority and Signature

David Michaels, PhD, MPH, Assistant Secretary of Labor for Occupational Safety and Health, U.S. Department of Labor, 200 Constitution Ave., NW., Washington, D.C., directed the preparation of this notice. OSHA is issuing this notice under the authority specified by Section 6(d) of the Occupational Safety and Health Act of 1970 (29 U.S.C. 655), Secretary of Labor's Order No. 4-2010 (75 FR 55355), and 29 CFR part 1905.

Signed at Washington, DC, on December 13, 2011.

David Michaels, PhD, MPH,
Assistant Secretary of Labor for Occupational Safety and Health.

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