COPY

NORTH CAROLINA DEPARTMENT OF LABOR

CHERIE K. BERRY
COMMISSIONER

JOHN H. JOHNSON
DEPUTY COMMISSIONER/DIRECTOR
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH

April 27, 2001

OSHA Standard Interpretation and Compliance Letter - Table of Contents

- **Record Type:** Interpretation
- **Standard Numbers:** 1926.451, 1926.452
- **Subject:** Pump Jack Scaffolding System (Masonry use), McGee Brothers Company, Inc.

Mr. Don McGee
McGee Brothers Company, Inc.
4608 Carriker Road
Monroe, North Carolina 28110

Dear Mr. McGee:

This letter is provided to bring closure to on-going dialogue between 2/16/2000 and 5/19/2000 addressing issues and/or concerns related to pump jack scaffolding as presented previously by McGee Brothers Company, Inc. I apologize that the action to complete this response was not provided you before now. The information attached is essentially the same as that contained in a draft document discussed and provided you and company representatives at a meeting held in Charlotte on 5/19/2000 (attended by Bob Andrews and Bobby Davis). That meeting allowed discussion of the proposed pump jack scaffold system as designed by Mr. David Young and interpretation of related safety standards. In addition, that meeting gave us the opportunity to address issues which stemmed from Standards Officer Bobby Davis' visit to your company and job site on 2/16/2000. We also evaluated your previous request for a variance from standards which regulate pump jack scaffolding. In subsequent discussion after the 2/16 meeting, it was agreed that a variance request did not properly address your company's concerns as indicated in your letter about pump jack use. It was determined that an interpretation of the standard and/or clarification best addressed your specific concerns. Therefore the enclosed attachment (six total pages) is offered to clarify the 14 issues addressed.

As an agency, we will ensure our compliance personnel are provided information and training on pump jack scaffold systems as proposed for use by your company. I encourage you to continue your efforts to ensure your employees are trained and use the pump jack system as indicated in the design by Mr. Young. I believe the focus of our combined efforts will work to ensure employee safety and compliance with appropriate safety standards. Please note that the interpretation provided for Item #2 stipulates that your company no longer modify scaffold planking by embedding rebar across the planks and parallel to the bearers. If we can be of any further assistance regarding employee safety or health related concerns please contact Bobby Davis at (919) 807-2873; email: bdavis@mail.dol.state.nc.us.

Sincerely,

John H. Johnson
Director

4 WEST EDENTON STREET • RALEIGH, NORTH CAROLINA 27601-1092
(919) 807-2861 • FAX: (919) 807-2855 • JJOHNSON@MAIL.DOL.STATE.NC.US

Standard Interpretation Provided for McGee Brothers Construction Company

Employer Request/Concern	Standard Referenced by Employer	NCDOL/OSH ETTA Standard Interpretation	Engineer Data
1. **Request NC/OSHA accept PE David Young's 1992 study and specs (updated 01/25/2000) to allow wooden poles to extend vertical distance greater than 30 ft.; company desires 50 ft overall vertical distance.**	**1926.451(a)(1):** Except as provided (a)(2), (a)(3), (a)(4), (a)(5), and (g) of this section, each scaffold and scaffold component shall be **capable of supporting, without failure**, its own weight and **at least 4 times the maximum intended load** applied or transmitted to it.	As recognized by the Notice of Proposed Rulemaking for Subpart L—Scaffolds, issued November 25, 1986 (51 FR 42680), **design of a scaffold system by a registered professional engineer is acceptable provided the capacity criteria of paragraph .451(a) and the use criteria of .451(f) of the proposal are met.** In addition, the employer needs to ensure manufacturer approval is provided as necessary for component(s) that may be in conflict with intended/advertised use (i.e. weight limit specification of pump jack). The employer is also responsible to ensure compliance with other applicable section(s) of the standard for pump jack scaffolds.	YES
2. **Request NC/OSHA accept PE David Young's 1992 study (updated 01/25/2000) allowing weight limit greater than 500 pounds per bay; company desires 1200 lbs.**	**1926.451(a)(6):** Scaffolds shall be **designed by a qualified person** and shall be constructed and loaded in accordance with that design. **Non-mandatory Appendix A to this subpart** contains examples of criteria that will enable an employer to comply with paragraph (a) of this section.	**The weight limit** (maximum intended load of 500 pounds between poles) is now stated in the Non-mandatory Appendix of the safety standard; however, ANSI A-10.8 also establishes a requirement that pump jack scaffolds shall be designed for a working load of 500 pounds. Similarly, as stated in interpretation to address item 1, **design of a scaffold system by a registered professional engineer is acceptable** provided the capacity criteria of paragraph .451(a) and the use criteria of .451(f) of the proposal are met. **Under these guidelines the registered professional engineer is recognized or accepted as a "qualified person".** Again, as related to this issue of concern, the employer should remain aware of limitations or restrictions for equipment or integral parts established by the manufacturer. In addition, the employer is responsible to ensure the scaffolding is erected and used in accordance with design limitations specified by a registered professional engineer; to include compliance with other applicable section(s) of the standard. ***Point of Concern for Employer's Proposed Plan/Scaffold Design Not Address by Engineer (Planking)*** A point of concern related to scaffold planking was noted at time of the visit to the job site on 02/16/2000. The Safety Standards Officer learned the use of rebar as reinforcement for planking had not been considered or addressed by the engineer for the proposed scaffold design. (**NOTE**: At meeting held on 05/19 the employer stated use of rebar was no longer being considered or used as option to strengthen/reinforce planking)	YES

Provided by: Bobby R. Davis, Safety Standards Officer
Information Date: May 2000

Standard Interpretation Provided for McGee Brothers Construction Company

3. Request Variance or letter of interpretation to allow work bench position to serve as top rail on pump jack scaffold.	**Non-Mandatory App. A (1926 Subpart L App. A)** This appendix provides non-mandatory guidelines to assist employers in complying with the requirements of Subpart L of this part. However, the guidelines do not provide all the information necessary to build a complete system, and the employer is still responsible for designing and assembling these components in such a way that the complete system will meet the requirement of 1926.451(a).	**1926.452(j)(3) is more specific** to address how work benches may be used as the toprail when guardrails are used as fall protection for pump jack scaffold. Specifically, the standard states that the workbench may be used as fall protection only if all requirements in paragraphs (g)(4)(ii), (vii), (viii), and (xiii) of 1926.451 are met. 1926.452(j)(4) may also be helpful to address other possible concern(s) about work bench use; wherein the standard is specific in stating work benches shall not be used as scaffold platforms. As related to the pump jack scaffold system used by McGee Brothers, **1926.451(g)(4)(ii)** states: **The top edge heights** of toprails or equivalent member or supported scaffolds manufactured or placed in service **after January 1, 2000** shall be installed **between 38 inches (0.97 m) and 45 inches (1.2 m) above platform surface.** Training material and information provided by Federal OSHA states no midrail is needed in an example provided (photo slide, Pump Jack/Ladder Jack Scaffold Photo Compliance Guide – March 1998) in which gap between platforms is 23 inches. In this example the work bench can serve as top rail because the vertical distance from the platform is 23 inches + 4 inch thick platform + 12 inch horizontal plank width = 39 inches. **Further, ANSI A-10.8 (1988, 1977) established**: When a **workbench is used at an approximate height of 42 inches, the toprail may be eliminated if the workbench is full decked, if the planking is secured, and if it is capable of withstanding a 200—pound force in any direction. 1926.451(g)(4)(vii)** states the following as related to system used by McGee Brother's: Each toprail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 200 pounds (890 n). Requirements stated in **1926.451(g)(4)(viii)** are: When the loads specified in paragraph (g)(4)(vii) of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii) of this section. **1926.451(g)(4)(xiii)** states steel or plastic banding shall not be used as a top rail or midrail.	YES
4. Request NC/OSHA accept field testing by PE to allow pump jack poles to go up to 50 feet and maximum intended load be increased to 1200 lbs	**Appendix A – (j): Pump Jack Scaffolds** Wood poles shall not exceed **30 feet in height. Maximum intended load—500 lbs between poles**; applied at the center of the span.	As understood by NCDOL/OSH the employer's concern and point of interest is that this **requirement is now stated in the Non-mandatory Appendix** of the standard. However, ANSI A-10.8 established requirements that: (1). Wood poles shall not exceed 30 feet in height for pump jack scaffolds; (2) pump jack scaffolds shall be designed for a working load of 500 pounds. The interpretation(s) as provided to address Item 1 and Item 2 should also be helpful to address employer's concern and desire stated here. Again, as stated in interpretation to address item 1, **design of a scaffold system by a registered professional engineer is acceptable provided the capacity criteria of paragraph .451(a) and the use criteria of .451(f) of the proposal are met.** Also, as related to this issue of concern the employer should remain aware of limitations or restrictions for equipment or integral parts established by manufacturer. In addition, the employer is responsible to ensure the scaffolding is erected and used in accordance with design specified by registered professional engineer; to include compliance with other applicable standards in section(s).	YES

Provided by: Bobby R. Davis, Safety Standards Officer
Information Date: May 2000

Standard Interpretation Provided for McGee Brothers Construction Company

5. Employer feels they already comply with 1926.452(j)(1). McGee Brothers provided comments or documents that all their pump jacks are fabricated from metal plates, angles, and rounds, and have two gripping mechanisms to prevent slippage	1926.452(j)(1): Pump jack brackets, braces and accessories shall be fabricated from metal plates and angles. Each pump jack bracket shall have two gripping mechanisms to prevent slippage.	As understood by NCDOL/OSH, the position/point of interest by employer for this item is to confirm McGee Brothers Company, Inc. awareness of requirements and to state efforts that exist to comply with 1926.451(j)(1).	YES
6. Either a permanent variance to allow a combination of wood and metal bracing for the system, or a letter of interpretation to explain purpose and application of (j)(1) and (j)(2).	1926.452(j)(2): Poles shall be secured to the structure by **rigid triangular bracing or equivalent** at the bottom, top, and other points as necessary.	NCDOL/OSH understands employer's concern and view (per sources of information provided to OSH department by company) that 1926.452(j)(2) does not state or establish a requirement for brace material to be metal as so stated in 1926.452(j)(1). The requirements stated in 1926.452(j)(2) do allow provision of rigid triangular bracing or "equivalent" means to secure poles to the structure.	YES
7. Variance or letter of interpretation to accept McGee Brothers policy, wherein they place in & out below the scaffold platform along with X-bracing before the brace above the platform is removed.	1926.452(j)(2): When the pump jack has to pass bracing already installed, an additional brace shall be installed approximately 4 feet (1.2 m) above the brace to be passed, and shall be left in place until the pump jack has been moved and the original brace reinstalled	NCDOL/OSH understands the employer's (McGee Brothers) position for this item as: their pump jack scaffold system is designed by professional engineer (Mr. David Young, P.E.). Given this point, it is acceptable to use the method of in and out (eyebolt ties through structure) below scaffold platform along with X-bracing provided this measure meets requirements of scaffold design and also works to meet or exceed intent of 1926.452(j)(2) as an equivalent action	YES

Standard Interpretation Provided for McGee Brothers Construction Company

8. Variance or letter of interpretation to accept workbench position to serve as top rail. The workbench height (24 inches) and depth (@ 20 inches) provide 44 inches fall protection surface.	1926.452(j)(3): When guardrails are used for fall protection, a **workbench may be used as the top rail** only if it meets all the requirements in paragraphs (g)(4) (ii), (vii), (viii), and (xiii) of 1926.451	This issue was first addressed in Item 2; it will be restated here to address Item 8. **1926.452(j)(3) is specific** to address how work benches may be used as the top rail when guardrails are used fall protection for pump jack scaffold. The standard states only if all requirements in paragraphs (g)(4)(ii), (vii), (viii), and (xiii) of 1926.451 are met. 1926.452(j)(4) may also be helpful to address other possible concern(s) about work bench use; this standard is specific in stating **work benches shall not be used as scaffold platforms.** To address guardrail requirement(s) for pump jack scaffold system used by McGee Brothers **1926.451(g)(4)(ii)** states: The top edge heights of top rails or equivalent member or supported scaffolds manufactured or placed in service **after January 1, 2000** shall be **installed between 38 inches (0.97 m) and 45 inches (1.2 m) above platform surface.** Training material and information provided by Federal OSHA states no midrail is needed in an example provided (photo slide, Pump Jack/Ladder Jack Scaffold Photo Compliance Guide – March 1998) in which gap between platforms is 23 inches. In this example the work bench can serve as top rail because the vertical distance from the platform is 23 inches + 4 inch thick platform + 12 inch horizontal plank width = 39 inches. Further, **ANSI A-10.8** (1988, 1977) established: When **a workbench is** used at an **approximate height of 42 inches,** the top rail may be eliminated if the **workbench is full decked, if the planking is secured,** and if it is **capable of withstanding a 200—pound force in any direction. 1926.451(g)(4)(vii)** states the following as related to system used by McGee Brothers: Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 200 pounds (890 n). Requirements stated in **1926.451(g)(4)(viii)** are: When the loads specified in paragraph (g)(4)(vii) of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii) of this section. **1926.451(g)(4)(xiii)** states steel or plastic banding shall not be used as a top rail or midrail.	YES
9. Request letter of interpretation to accept workbench position to serve as top rail. The workbench height (24 inches) and depth (@ 20 inches) provide 44 inches fall protection surface	1926.451(g)(4)(ii): The **top edge height of top rails or equivalent member** on supported scaffolds manufactured or placed in service after January 1, 2000 shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above the platform surface . (plus additional information on suspended scaffolds, i.e. top edge height or equivalent member being between 36 inches (0.9 m) and 45 inches (1.2 m).	The employer's concern as indicated in this item have been addressed in general by an interpretation provided for Item 4 and Item 8: As related to pump jack scaffold system used by McGee Brothers **1926.451(g)(4)(ii)** states: The top edge heights of top rails or equivalent member or supported scaffolds manufactured or placed **in service after January 1, 2000** shall be installed **between 38 inches (0.97 m) and 45 inches (1.2 m) above platform surface.** Training material and information provided by Federal OSHA states no midrail is needed in an example provided (photo slide, Pump Jack/Ladder Jack Scaffold Photo Compliance Guide – March 1998) in which gap between platforms is 23 inches. In this example the work bench can serve as top rail because the vertical distance from the platform is 23 inches + 4 inch thick platform + 12 inch horizontal plank width = 39 inches. Further, **ANSI A-10.8** (1988, 1977) established: When a workbench is used at an **approximate height of 42 inches,** the **top rail may be eliminated if the workbench is full decked, if the planking is secured,** and if it is **capable of withstanding a 200—pound force in any direction. 1926.451(g)(4)(vii)** states the following as related to system used by McGee Brother's: Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 200 pounds (890 n). Requirements stated in **1926.451(g)(4)(viii)** are: **When the loads** specified in paragraph (g)(4)(vii) of this section are **applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii)** of this section. **1926.451(g)(4)(xiii)**	YES

Standard Interpretation Provided for McGee Brothers Construction Company

		states steel or plastic banding shall not be used as a top rail or midrail.	
10. Request letter of interpretation to accept workbench position to serve as top rail. The workbench height (24 inches) and depth (@ 20 inches) provide 44 inches fall protection surface. Company states strength of workbench is such that it has minimal sag.	1926.451(g)(4)(vii): Each top rail or equivalent member of a guardrail system shall be capable of **withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge** of at least 100 pounds (445 n) for guardrail system installed on single-point adjustable suspension scaffolds or two-point adjustable suspension scaffolds, and **at least 200 pounds (890 n)** for guardrail systems installed on all other scaffolds.	For pump jack scaffold system used by McGee Brothers **1926.451(g)(4)(ii)** is interpreted first to identify position of top rail, the requirement are understood as: The top edge heights of top rails or equivalent member on supported scaffolds manufactured or placed in service after January 1, 2000 shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above platform surface. **1926.451(g)(4)(vii)** addresses the strength requirement of top rail to withstand an applied force: **Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 200 pounds (890 n).** Requirements stated in **1926.451(g)(4)(viii)** also address top rail specification: When the loads specified in paragraph (g)(4)(vii) of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii) of this section. Training material and information provided by Federal OSHA states no midrail is needed in an example provided (photo slide, Pump Jack/Ladder Jack Scaffold Photo Compliance Guide – March 1998) in which gap between platforms is 23 inches. In this example the work bench can serve as top rail because the vertical distance from the platform is 23 inches + 4 inch thick platform + 12 inch horizontal plank width = 39 inches. Further, **ANSI A-10.8** (1988, 1977) established: When a **workbench is used at an approximate height of 42 inches**, the top rail may be eliminated if the workbench is full decked, if the planking is secured, and if it is **capable of withstanding a 200—pound force** in any direction. **1926.451(g)(4)(xiii)** states steel or plastic banding shall not be used as a top rail or midair.	YES
11. Variance or letter of interpretation to accept workbench position to serve as top rail. The workbench height (24 inches) and depth (@ 20 inches) provide 44 inches fall protection surface. Company states strength of workbench is such that it has minimal sag	1926.451(g)(4)(viii): **When the loads specified** in paragraph (g)(4)(vii) of this section are **applied in a downward direction, the top edge shall not drop below the height above the platform surface** that is prescribed in (g)(4)(ii) of this section	**1926.451(g)(4)(vii)** states the following as related to system used by McGee Brother's: Each top rail or equivalent member of a guardrail system shall be capable of withstanding, without failure, a force applied in any downward or horizontal direction at any point along its top edge of at least 200 pounds (890 n). Requirements stated in **1926.451(g)(4)(viii)** are: When the loads specified in paragraph (g)(4)(vii) of this section are applied in a downward direction, the top edge shall not drop below the height above the platform surface that is prescribed in paragraph (g)(4)(ii) of this section. For scaffold system used by McGee Brother's **1926.451(g)(4)(ii)** states: The top edge heights of top rails or equivalent member or supported scaffolds manufactured or placed in service **after January 1, 2000 shall be installed between 38 inches (0.97 m) and 45 inches (1.2 m) above platform surface.** Training material and information provided by Federal OSHA states no midrail is needed in an example provided (photo slide, Pump Jack/Ladder Jack Scaffold Photo Compliance Guide – March 1998) in which gap between platforms is 23 inches. In this example the work bench can serve as top rail because the vertical distance from the platform is 23 inches + 4 inch thick platform + 12 inch horizontal plank width = 39 inches. Further, ANSI A-10.8 (1988, 1977) established: When a workbench is used at an approximate height of 42 inches, the top rail may be eliminated if the workbench is full decked, if the planking is secured, and if it is capable of withstanding a 200—pound force in any direction. **1926.451(g)(4)(xiii)** states steel or plastic banding shall not be used as a top rail or midrail.	YES

Standard Interpretation Provided for McGee Brothers Construction Company

12. McGee Brothers safety program does not allow practice of steel or plastic banding for top rail or mid rail.	1926.451(g)(4)(xiii): Steel or plastic banding shall not be used as a top rail or a mid rail.	As understood by NCDOL/OSH, McGee Brothers Company, Inc.'s position/point of interest for this item is to state their awareness of and efforts that exist to comply with 1926.451(g)(4)(xiii).	N/A
13. Use of pallet to access pump jack scaffold; pallet positioned within 12 inches of scaffold horizontally and 20 inches vertically. McGee Brothers safety program does not allow the use of cross braces for access.	1926.451(e)(1): When **scaffold platforms are more than 2 feet above or below a point of access,** portable ladders, hook-on ladders, attachable ladders, stair towers (scaffold stairways/towers), stairway-type ladders (Such as ladder stands), ramps, walkways, integral prefabricated scaffold access or direct access from another scaffold, structure, or personnel hoist, or similar surface shall be used. Cross braces shall not be used as a means of access.	NCDOL/OSH understands the employer's intent for this item as: provide machinery/equipment that allow employee to be lifted to desired height to access work platform while standing on pallet (fabricated type man basket). The **employer uses manlift type equipment to elevate employee to desired height**. Upon observing pallet referenced here, I determined that it is of adequate design as a manlift type basket, however the employer needs **to be aware of other possible issues of fall protection which may (likely will) come in play** when using this method and equipment to access the scaffold work platform. Specifically, the employer needs to be aware of fall protection requirements under subpart M (i.e. safety harness or other fall arrest system) when employee is exposed to fall hazard.	N/A
14. Use of pallet to access pump jack scaffold; pallet positioned within 12 inches of scaffold horizontally and 20 inches vertically. McGee Brothers safety program does not allow the use of cross braces for access.	1926.451(e)(8): Direct access to or from another surface shall be used only when the scaffold is not more than 14 inches horizontally and not more than 24 inches vertically from the other surface.	The information stated previously to address Item 13 also applies to address item here. The employer's intent is to provide machinery/equipment and allow employee to be lifted to desired height to access work platform while standing on pallet (fabricated type man basket). In addition, the employee is expected to step momentarily onto the workbench (which also is being used as a top rail), to then step down onto work platform. The employer uses manlift type equipment to provide elevation of employee to desired height. Upon observing pallet referenced here, I determined that it is of adequate design as a manlift type basket, however the employer needs to be aware of other possible issues of fall protection which may/do come in play when using this method and equipment to access the scaffold work platform. Specifically, the employer needs to be aware of fall protection requirements under subpart M (i.e. safety harness or other fall arrest system) when employee is exposed to fall hazard.	N/A