Manitowoc®
Crane Group

Docket S-030
Ex. 66-9

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May 20, 2004

Audrey Rollor
Occupational Safety and Health Administration
U. S. Department of Labor
200 Constitution Avenue NW
Washington, DC 20210

Reference: Crane and Derrick Negotiated Rulemaking Advisory Committee Docket S-030

Dear Ms. Rollor:

We understand that the referenced committee is still in the process of drafting the proposed text for the proposed revision to 29CFR1926.550. The Manitowoc crane group, as an interested party, would offer the following for consideration by the committee.

The paragraph below is proposed by AEM and the Crane Technical Committee to C-DAC. It applies to cantilevered, telescopic boom cranes. Similar text will appear as Section 1432, paragraph c of the new C-DAC version of 1926.550.

For prototype telescopic/extendible boom cranes, a manufacturer shall verify design/stress calculations by applying stress or strain measuring devices on all critical structural members. An analysis of each structure shall be made to locate highly stressed members and stress concentration areas. The location and direction of these devices shall be determined from this analysis as well as from the use of other empirical or experimental techniques. All the tests listed in SAE J-1063, Table 1, must be performed to load all critical structural members to their respective limits. All the strength margins listed in SAE J 1063 table 2 shall be met.

Rationale: By following the tables in SAE J-1063, an all out strain test program does not have to be followed. This assumes that there has been strain gage model or component tests performed in the R and D phase to verify and validate computer aided or calculated design. Limited strain gages have to be applied to specific critical stations, stress concentration areas to verify the strength margins in Table 2.

The Manitowoc Crane Group proposal is this:

For prototype telescopic/extendible boom cranes, a manufacturer shall verify design/stress calculations by test. An analysis shall be done, using empirical or experimental techniques, on each structure to identify highly stressed members and stress concentration areas in those members. The analysis shall take into account the load/test conditions of SAE J-1063, Table 1. The calculated strength margins shall not exceed those listed in SAE J-1063, Table 2.

Rationale: This method allows the manufacturer to verify design by through the use of modern analysis methods and sufficient load testing (including overload tests) as an alternate test method to SAE J-1063. By calculating the stresses for load conditions in SAE J-1063, Table 1, documentation can be provided to show that the manufacturer performed an evaluation of all major structural components. Also, this would show that the manufacturer considered all specified conditions that US manufacturers "look at". (Apples to apples analytical comparison. These methods could be used to justify substituting manufacturer's test for SAE J-1063 tests.

Additionally, if this type of analysis is acceptable for telescopic/extendible boom cranes, we would ask that the committee consider making the same type of alternative method available for lattice boom cranes as well.

We thank you for your consideration of this matter.

Sincerely,

Manitowoc Crane Group

Lynn A. Dietrich
Director of Engineering

Cc: Noah Connel, c/o: OSHA C-DAC committee
Suzan Podziba, c/o: OSHA C-DAC committee