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February 27, 1985

Dr. M. Hartzman
U.S. Nuclear Regulatory Commission
Mail Stop No. P522
Washington, D.C. 20555

Dear Dr. Hartzman,

This is a follow-up letter to our phone conversation on the afternoon of Feb. 27, 1984. The derivation for the unbraced length provisions in the AISC Sec. 1.5.1.4.1.5 and 1.5.1.4.5.2.b are given in detail on p. 456, 457 and 469 of the book "Steel Structures" by G.C. Salmon and J.E. Johnson (Second Edition, Harper and Row, 1980). The derivation follows the work of White, Lay, Lee and Galambos which was performed at Lehigh from about 1955 to 1965. This work only applies to plastic bending of wide-flange shapes to provide bracing to the compression flange so that the plastic moment can be attained. The limitation

$$76 b_f / \sqrt{F_y}$$

in AISC Sec. 1.5.1.4.5.2.b thus does not apply to single angles in bending.⁶ The basic allowable stress required is $0.6 F_y$.

Sincerely yours,

T.V. Galambos
Professor of Civil Engineering

TVG:pab

cc: Mr. Kenneth T. Kostal
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