

SLINGMAX® ADVISORY

November 8, 2007

Nuclear Regulatory Commission (NRC) Regulatory Issue Summary 2005-25, Supplement 1 Clarification of NRC Guidelines for control of heavy loads dated May 29, 2007.

History: The original standard for lifting at Nuclear Plants in the United States was NUREG-0612 which came out in 1980. All existing nuclear plants have identified how they satisfy the requirements of NUREG-0612 to the satisfaction of the NRC. The new NRC Guidelines (summary 2005-25) only apply to new nuclear plants – not to existing nuclear plants. You can contact Steven R. Jones, Nuclear Reactor Regulation, 301-415-2712 srj@nc.gov if you have questions regarding this document.

Twin-Path® Sling: The Twin-Path® sling with K-Spec® cores made from high performance textile fibers was designed to conform to the requirements of NUREG-0612 which called for lifting slings with dual or redundant paths or selected to support a load twice the weight of the handled load. Twin-Path® Slings have dual redundant paths. Compared to a single wire rope sling which requires a 10-1 design factor to meet NUREG-0612, the Twin-Path® is 94% lighter. Example: A 30' wire rope sling to lift 15 tons is 2" in diameter and weighs 360 lbs. A 30' Twin-Path® sling to lift 15 tons with redundant dual paths weighs 24 lbs.

Cutting: Steel slings like synthetic slings exposed to steel edges will cut unless they are properly protected. The Twin-Path® Sling has two types of patented protection available: Cornermax™ Pads and Cornermax™ Sleeves. See www.slingmax.com for technical information on protection.

Benefits of Twin-Path® Slings in nuclear plant rigging compared to steel:

1. Reduce or eliminate injuries to personnel
2. Improve rigging productivity reducing plant down time and saving millions of dollars
3. Easy transportation and storage – Using the above example, the Twin-Path® Sling stores in a one cubic foot container while the wire rope sling requires one-hundred cubic feet. Very important if the rigging gear is exposed to radioactivity.
4. The wire rope sling requires three people to handle it while one person can easily rig the Twin-Path® Sling.
5. An extra crane or fork lift is required to rig with wire rope and chain sling.
6. Objective inspection systems using fiber optics, tell-tails, and the new check-fast system
7. Greatly reduce exposure time of workers to radioactive environments

Comments on NRC Summary 2005-25 (Only for single failure proof loads):

- Interpretation of this document by some riggers has resulted in replacement of synthetic slings with wire rope or chain slings. However, the document does not make the use of wire rope or chain slings mandatory and it does not apply to existing nuclear plants – It states the following on Page 4:
- (2) *Slings should satisfy the criteria of American Society of Mechanical Engineers (ASME) B30.9-2003, “Slings,” and (should) be constructed of metallic material (chain or wire rope). The slings should be either (a) configured to provide dual or redundant paths or (b) selected to support a load twice the weight of the handled load. The next sentence says: “This change in guidance does not require any action for currently licensed reactors. This SRP (Standard Review Plan) is not a substitute for the NRC’s regulations, and compliance with it is not required.*
- **Twin-Path® Slings** satisfy the requirements of ASME B30.9, the Cordage Institute International Standard on Roundslings (1905-07) and every other applicable sling standard around the world. Twin-Path® Slings satisfy the requirement of NUREG-0612 and provide dual or redundant paths.
- **Single Failure Proof Load:** This document will apply to only “Single Failure Proof” loads or those where a load drop could impact stored spent fuel, fuel in the reactor core, or equipment like the cooling system that is required to achieve a safe shut-down. Any new rigging plan from a new nuclear plant can include synthetic Twin-Path® Slings for the NRC review. They just want to make sure the lift is properly planned. All other lifts including Turbines, covers, transformers, and any other heavy load may use Twin-Path® slings without clearance from the NRC.
- **The Electric Power Research Institute:** Twin-Path® Slings and Cornermax™ Pads are specifically mentioned in the EPRI Lifting, Rigging, and Small Hoist Usage Program Guide. This Rigging Handbook was prepared by riggers working in the United States Nuclear Power Industry.
- **Field Experience:** Working with 300 lb wire rope and chain slings creates additional hazards for the riggers compared to Twin-Path® Slings weighing 90% less.

See:

www.slingmax.com for technical information, tables, charts, on all types of slings and sling protection devices. There is also a section on available rigging training programs including “*Prevention of Rigger Mortis.*”



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