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THREE MILE ISLAND NUCLEAR STATION
UNIT NO. 1 GENERAL MAINTENANCE PROCEDURE 1408-6
PROCEDURE FOR THE INSPECTION OF WIRE ROPE OR SYNTHETIC SLINGS

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THREE MILE ISLAND NUCLEAR STATION UNIT NO. 1 GENERAL MAINTENANCE PROCEDURE 1408-6 PROCEDURE FOR THE INSPECTION OF WIRE ROPE OR SYNTHETIC SLINGS

1.0 PURPOSE

Provide guidance for inspection of slings constructed of wire rope or synthetic webbing prior to each use.

2.0 DESCRIPTION OF SYSTEM OR COMPONENT TO BE WORKED ON

Wire Rope or Synthetic Webbing Slings

3.0 REFERENCES

- 3.1 Met-Ed Safety Manual
- 3.2 ANSI B-30.9-1971
- 3.3 ANSI N-45.2.2-1978
- 3.4 ANSI B-30.10-1975

4.0 SPECIAL TOOLS, MATERIALS AND/OR QUALIFICATIONS REQUIRED

5.0 LIMITS AND PRECAUTIONS

5.1 Wire rope and synthetic web slings should not be used for a lift in which the total weight of load exceeds 90 percent of the rated capacity of the sling that is slated for use.

6.0 PROCEDURE

- 6.1 Slings must be cleaned and free of heavy grease or oil and dirt buildup prior to inspection.
- 6.2 All slings shall be identified with a tag carrying a manuf. name or trademark and rated capacity for type of hitch.
- 6.3 Inspection method for wire rope slings.
 - 6.3.1 Examine entire length of sling and end fitting. Replace the sling or send it to the manufacturer for repair and reload testing if any of the following conditions are present:

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- 6.3.1.1 Six randomly distributed broken wires in one rope lay, or three broken wires in one strand in one rope lay.
- 6.3.1.2 Wear or scraping of one-third the original diameter of outside individual wires. See Attachment A.
- 6.3.1.3 Kinking, crushing, bird caging or any other damage resulting in distortion of wire rope structure.
- 6.3.1.4 Evidence of heat damage.
- 6.3.1.5 End attachments that are cracked, worn or deformed.
- 6.3.1.6 Hooks that have been opened more than 15 percent of the nominal throat opening measured at the narrowest point or twisted more than 10 degrees from the plane of the unbent hook. Refer to ANSI B-30.10-1975 or manufacturers literature.
- 6.3.1.7 Corrosion of the rope or end attachments.
- 6.3.1.8 Elongation exceeding manufacturers recommendation.
- 6.4 Inspection method for synthetic slings.
 - 6.4.1 Inspect entire length of sling including fittings. Replace the sling or return to the manufacturer if any of the following conditions are found upon inspection.
 - 6.4.1.1 Acid or caustic burns.
 - 6.4.1.2 Melting or charring of any part of the sling surface.
 - 6.4.1.3 Snags, punctures, tears or cuts.
 - 6.4.1.4 Broken or worn stitches.
 - 6.4.1.5 Distorted fittings
 - 6.4.1.6 Wear through indicators exposed.
 - 6.4.1.7 Elongation exceeding manufacturer recommendations.

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7.0 ACCEPTANCE CRITERIA

- 7.1 No deficiencies found per Step 6.3.1 for wire rope slings.
- 7.2 No deficiencies found per Step 6.4.1 for synthetic web slings.
- 7.3 Sling replaced if deficiencies are found.

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ATTACHMENT "A"

ONE-THIRD WEAR CRITERIA

Interpretation of "one-third wear or scraping of outside individual wires" has not been adequately defined in Federal Standards or in wire rope manufacturers literature. As of 6-30-80 the Wire Technical Board of ANSI is not recommending any wording changes or further explanation in ANSI B-30.9. This information was gained from R.P. Ramsey who is Vice Chairman of the Wire Technical Board and also Chief Engineer of Universal Wire Products, Inc.

Therefore the following is established for the use of wire cable inspection use:

1. Find the single most severely worn or scrapped portion of the wire rope.
2. Determine the rope construction, manufacturer and obtain from the manufacturer the number of outside wires by design.
3. If outside wires must be worn more than 1/3 their original diameter before considering replacing the cable. Remember that 6 broken wires randomly located in one rope lay are required to reject a sling or three broken wires from one strand in one rope lay.