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Fiberglass Brackets and Guy Strain Insulators General Maintenance and Inspection Guidelines

This PIB describes basic guidelines for Inspection and Maintenance of MacLean Power System Fiberglass Brackets and Guy Strain Insulators. Individual users who wish to implement regular inspection or maintenance programs should take into consideration other aspects such as environment, application, and other potential risk factors when determining the frequency of inspection and response to inspection findings in such a program.

I. Recommended Inspection Intervals

- a. Under normal operating conditions routine maintenance is not typically required, but in special circumstances users may choose to perform routine inspections. Conditions which a user may wish to have routine inspection intervals include but are not limited to:
 - i. Installations in contaminated environments
 - ii. Due to specific line events, such as after significant storms
 - iii. Significantly aged lines
 - iv. During normal line maintenance or construction
- b. The interval at which inspections are performed, if any, should be determined by the end user based on their experience and knowledge of the conditions within their service territory

II. Inspection Procedures and Recommended Actions

- a. Inspection procedures apply to both Guy Strain Insulators and Fiberglass Brackets. Basic guidelines for inspection are outlined below. If the end user has additional concerns depending on the application, please consult MacLean Power Systems for additional support.
 - i. Visually inspect fiberglass for rod cracks, cuts, or gouges
 - MPS recommends immediate replacement of a device with indication of cracks, especially those running the length of the rod
 - MPS recommends immediate replacement of a device with indication of cuts or gouges beyond surface scratching
 - ii. Visually inspect for blooming or loose fibers on the rod surface



Figure 1 – Blooming of the Fiberglass Rod Surface

- MPS recommends immediate replacement of a device with indication of blooming or loose fibers on the rod surface

iii. Visually inspect for excess contaminate buildup



Figure 2 – Contamination Buildup Along the Fiberglass Rod Surface



Figure 3 – Contamination Buildup on the End Fittings

- Users may attempt to clean contamination buildup with a mixture of soap and water. Nonabrasive pads may also be used to aid in removing contamination. In excessive cases the device may need to be replaced.

- iv. Visually inspect for surface corrosion either buildup, erosion, or pitting
- MPS recommends eventual replacement of a device with indication of corrosion buildup beyond normal surface aging oxidation such as on Aluminum surfaces
 - Devices with physical surface erosion due to corrosive forces should be replaced immediately



Figure 4 – Surface Corrosion on the End Fittings

- v. If the fiberglass rods are silicone coated inspect for tears or cuts in the silicone rubber
- Cuts and gouges are not immediately an issue unless they are down to the fiberglass rod surface. In these instances, eventual replacement of the device is suggested.
 - Any surface scratches, cuts, or gouges should be smooth
 - Cuts or gouges in the rubber surface should be no larger than a quarter and no more than 3 per device
 - Use of silicone coated guy strain insulators may be beneficial in excessively contaminated environments

Please consult your MPS representative with any further questions.

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