

NSRP

National Shipbuilding Research Program

Fusion Splice Enclosure at Equipment

December 11, 2019

NSRP Electrical Technologies Panel Meeting
Somerville, NJ



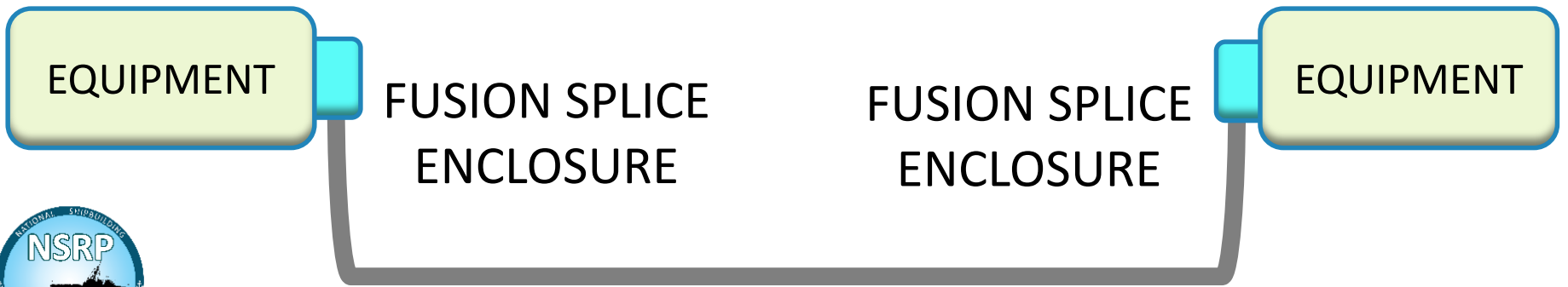
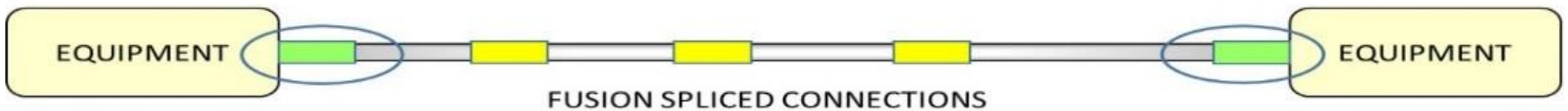
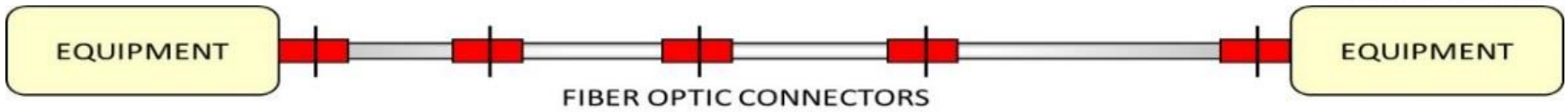
DISTRIBUTION STATEMENT A- Approved for public release.

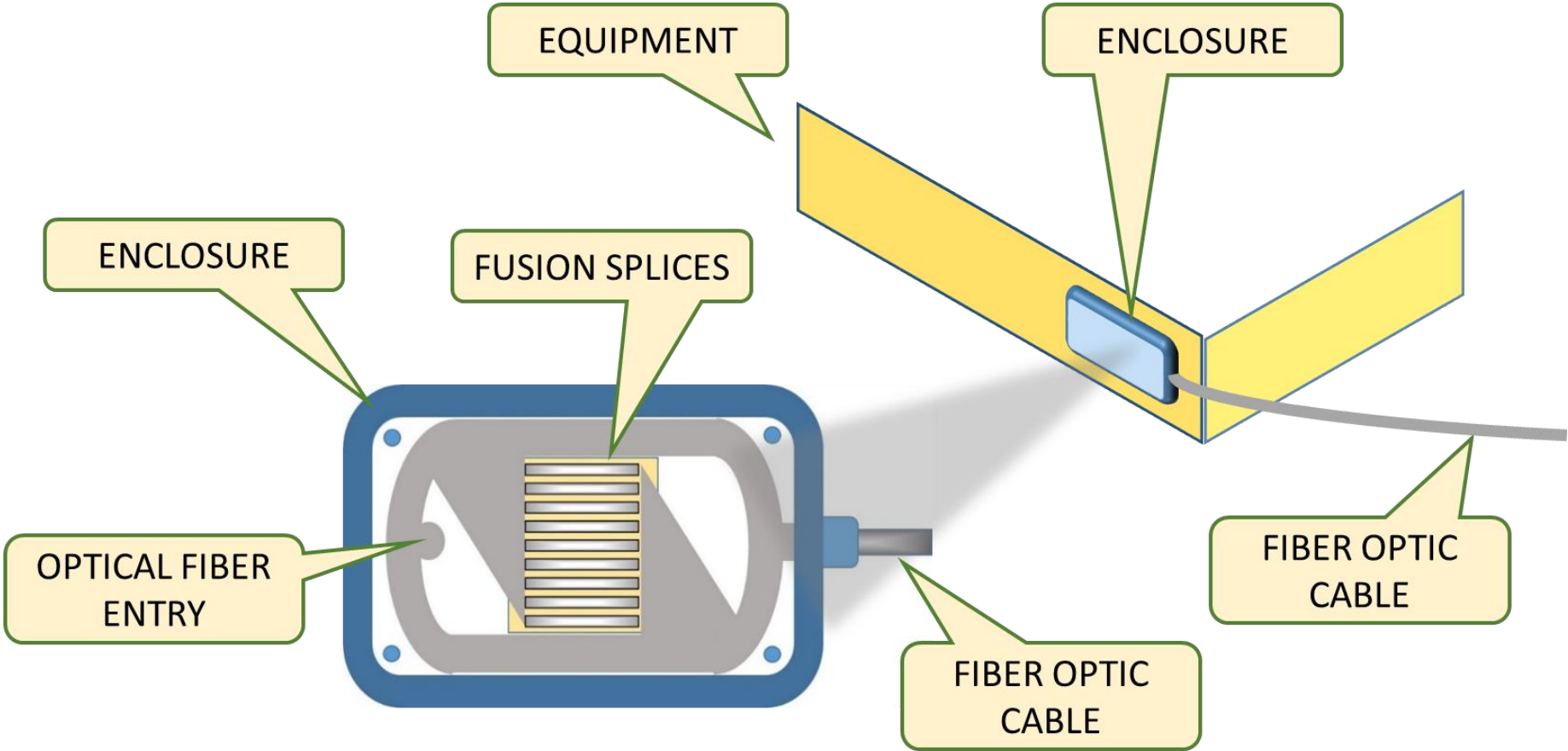
Eliminating Fiber Optic Connectors

NSRP Panel Project 2015-442 Alternatives to Fiber Optic Connectors provided a business case for use of fusion splicing.

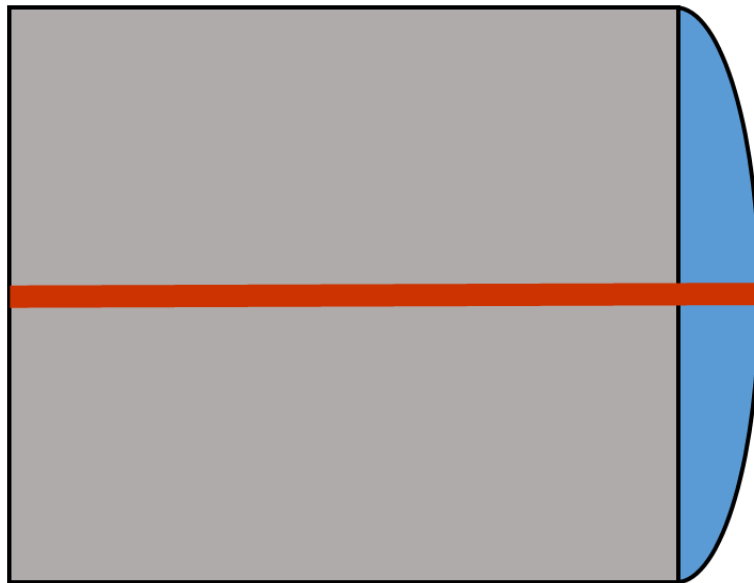
One more increment remains: *direct connection to furnished equipment using fusion splices.*







CORE ALIGNMENT is CRITICAL



END FACE RADIUS- 10 mm

APEX OFFSET- 50 micron

FIBER HEIGHT- 50 nm

And physical measurement of glass may not correspond to where the light goes!

ROI and BENEFITS

CONNECTORS- require cleaning and inspection with every mate / demate.

FUSION SPLICES- are permanent.

IMPORTANT CONSIDERATION

- Some connections must have connectors and the associated maintenance.

LIFE CYCLE BENEFIT- no maintenance for permanent connections!

ACQUISITION*- 70 percent cost reduction in fusion spliced connection over connector.

* As calculated in NSRP Panel Project 2015-442.

