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|  | <b>TITLE:</b><br><b>Connector P/N 0764-1221B</b><br><b>Design Change Acceptability</b> | <b>CASE NO:</b>  |
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**PURPOSE**

This Report is provided to demonstrate the acceptability of ITT Barton Engineering Orders (EO) 11172 (January 1982) and 12380 (June 1982).

**DISCUSSION**

In the original design of the connector (P/N 0764-1062B), as subjected to IEEE-323 LOCA qualification testing, the two Tefzel insulated external lead wires, that are terminated at the hermetic seal terminals, were provided with Polyolefin heat shrink that isolated the wire insulation, wire, solder joint and the hermetic seal pass-thru conductors from the epoxy potting.

In January of 1982, the design was changed by EO 11172 to replace the Polyolefin heat shrink with Kynar heat shrink (P/N 0764-1062B replaced by P/N 0764-1221B). This material change represents a significant improvement in material with respect to radiation, thermal and long term aging considerations.

In June of 1982 the heat shrink on the external lead wires was removed (EO 12380).

Neither the Polyolefin nor the Kynar heat shrinks were designed to provide a leaktight seal with the wire insulation. With the heat shrink tubing in place, a leakage path between the heat shrink tubing and the wire insulation, wire, solder and the hermetic seal terminals, down to the point where the tubing ends inside the potting, was more likely. There was also the potential for voids inside the heat shrink tubing in the original design. Without the heat shrink tubing, the epoxy will completely fill all the voids by making direct contact with all the encapsulated components.

**CONCLUSION**

With the heat shrink tubing removed, the possibility of a leakage path and voids is reduced. Thus, removing the heat shrink tubing represents an improvement over the original design.