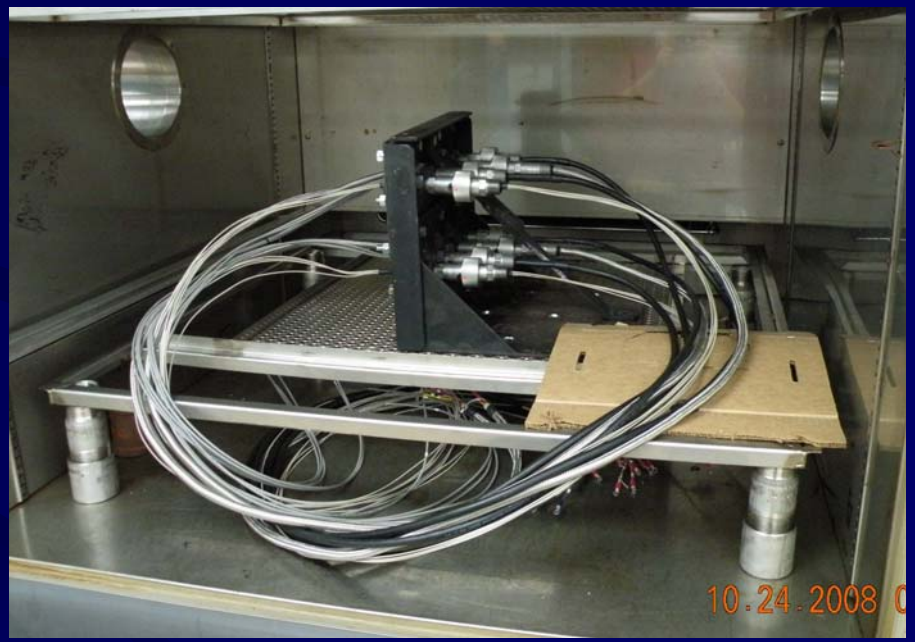
Generation 3 QDC Qualification Status

March 2009

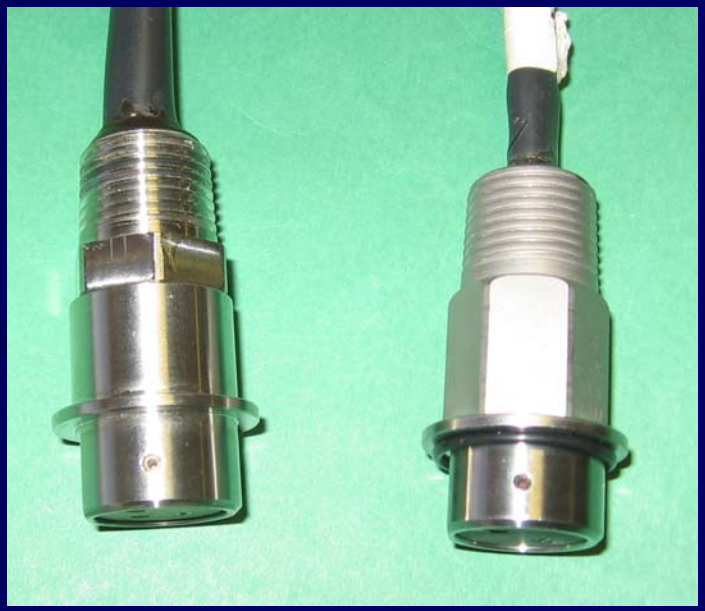
Enhanced Environmental Parameters

- Targeted toward “New Build” Requirements
  - Thermal aging 1226 hours
  - LOCA Pressure to ~100 psig
  - Post-LOCA Submergence
  - Radiation 2.2E8 rads



Enhanced Design

- All materials upgraded for improved radiation and thermal resistance
- Mechanical seals have been added at cable seal area for submergence
- Wave spring force has been reduced for ergonomic advantage
- Improved wire/cable strain relief
- Two piece backshell for interface versatility



Wire/Cable Options

- XLPE
- Silicone Rubber
- Silicone Rubber with stainless steel armor
- PEEK

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Compatibility with Gen 1 QDC

- Target for Gen 3 is “New Build” plus “Submergence” for installed base applications
- Intention is “complete QDC assembly” driven however:
  - ½” size is able to mate with existing 16 and 20 AWG configurations
  - ½” size is not able to mate with 12 and 14 AWG configurations
  - ¾” and 1.5” QDC sizes are being designed now

Test Sequence per IEEE 572

- Baseline
- Vibration Aging (IEEE382, 5-200 Hz)
- Thermal Cycling (10 cycles, 30C to 121C)
- Cycle Aging (160 disconnects)
- Thermal Aging (1226 hr at 126C)
- Functional Tests
- Radiation Aging (3E7 rads-air, 5E5 rad/hr)

Test Sequence (cont)

- Thermal Cycling (10 cycles, 30C to 121C)
- Functional Tests
- Seismic (10 g RIM OBE/SSE + RMF SSE)
- Functional Tests
- Accident Radiation (1.9E8 rads gamma) **Completed 4/1/09**
- Functional Tests
- LOCA/Submergence Simulation (peak = 435°F)
- MSIV/MSLB Simulation (peak = 475°F)
- Post – test Inspections

Schedule

- Accident radiation began on March 20, 2009 and was completed on April 1st.
- Accident tests should be complete by June 2009.

Questions and Contact Information

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