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To: Distribution

From: Steve Layman

Subject: EPI-Lo Sensor Peer Review Action Item Responses

Description: On May 22nd, 2013 the EPI-Lo team held a peer review for the Sensor Assembly. This memo lists all recorded action items and their response.

Action Item List:

Identification Number	Reviewer	Actionee	Area of Concern	Concern	Recommended Action	Date Opened	Due Date	Action Response
1	Scott Weidner	Ken Nelson	Anode board	HV Guarding	Make ground "targets" surrounding HV on a LV side of the PWB to protect LV circuitry from discharges	5/22/2013	7/4/2013	Completed.
2	Susan Pope	Steve Layman	3Kv Lug Connection	Extra parts covering this lug connection provides extra surface	Remove Ultem cover and associated spring washer (slide 11) on 3Kv lug connection	5/22/2013	7/4/2013	Parts have been deleted.
3	Susan Pope	Steve Layman	MCP holder 900V connection	Increased spacing from 1000V to 900V at connection point	Make 900V guard washer out of plastic and eliminate Kapton spacer	5/22/2013	7/4/2013	Guard washer removed. Lug redesigned.
4	Susan Pope	Steve Layman	Venting	Unvented volumes are virtual leak. The local increase in pressure can lead to HV breakdown.	Vent all fasteners. (1) Vented Screws (2) Vent trapped volume sideways by drilling in below threads	5/22/2013	7/4/2013	Will incorporate into the design.
5	Steve Jaskulek	Steve Layman	Wedges	UV	Use aluminum tape to close the gaps between the wedges for UV purposes	5/22/2013	7/4/2013	Will know more when we assemble. Will use it if needed.
6	Steve Jaskulek	Steve Layman	Wedges		Consider using bevel washer on screw for the 1000 volt to the side wall to avoid loss of contact due to material creep	5/22/2013	7/4/2013	Will use bevel washers.
7	Steve Jaskulek	Ken Nelson	Anode board		The separation distance around the 3000V components on the anode board component side have only 1000/mm spacing along the board surface. This needs to be increased. Is the decoupling 3000V cap even needed?	5/22/2013	7/4/2013	Increased as much as possible.
8	Steve Jaskulek	Ken Nelson	HV testing		If HV standoff is run at room temperature rather than our expected max temp in test/qual, we may need to increase the HV (e.g. 3600 --> 4000) to compensate.	5/22/2013	7/4/2013	Run HV stand off test with heaters
9	Steve Jaskulek	Steve Layman	Wedges		Reshape the 1Kv lug to provide more separation from the side wall, and open hole. The 2-9 Kv lug is even worse.	5/22/2013	7/4/2013	Redesigned to a "dog leg."

Identification Number	Reviewer	Actionee	Area of Concern	Concern	Recommended Action	Date Opened	Due Date	Action Response
10	Steve Jaskulek	Ken Nelson	HV testing	Discharge monitoring must use partial discharge circuits, not just use the HV supply trip.	Use blocking cap and CSA to look for discharges.	5/22/2013	7/4/2013	Will employ CSA in future testing.
11	Ken Nelson	Scott Weidner	Anode board		Give identifier of Kapton sheet used in PWB stackup for IES	5/22/2013	7/4/2013	Information sent to APL.
12	Don Mitchell	Steve Layman		The insulator between the cover and the 1 kV volume spans a gap of 2mm.	It should be shaped so that the surface path along the insulator surface is at least 3mm. For example, "T" shaped or "U" shaped.	5/22/2013	7/4/2013	We will modify to accommodate request.

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