CABLE REVIEW MEETING SUMMARY

April 26, 2001

Present: D. Boehnlein, A. Byon-Wagner, S. Madani, J. Priest, D. Saranen, K. Schuh, J. Thron

1. Far Detector Front End Readout cables; J. Priest and K. Schuh performed some flame tests on a packet of ribbon cables packed in a Zipper Tubing sample, which was brought to the meeting to demonstrate the fire damage. He reported that the Zipper tubing does smolder and off-gas. The pH of the aluminized cloth was about 2; that of the cable itself was around 4. The conclusion was that the Zipper Tubing was more of a source than a shield and in the event of a fire we'd be better off without it. However, the aluminized tape that was applied to tighten the Zipper Tubing actually held up quite well. The committee recommends discarding plans to use Zipper Tubing. A better solution is probably to wrap the ends of the cable (within a meter or two of the ignition source) with aluminized tape and apply a flame-proof coating to the ends. Ceramic tubing might also be an option. J. Priest will investigate these methods and the committee will recommend one for use with the Front End cables.

2. A. Habig sent e-mail suggesting a new cable type for the DCS RS232, Belden PN 88641. The jacket is red FEP (Teflon) which, although halogenated, does not off-gas until it reaches very high temperatures. One point to keep in mind is that red cables, at least at Fermilab, typically denote high voltage, so it is advisable to label this cable clearly as not carrying high voltage if the color red is used.

A final choice of environmental monitoring cable has yet to be made, although it seems advisable that a single cable be used for this. Before a cable can be approved for this purpose, the committee needs to know more about the power supply (Field Point unit) and how much current it is capable of putting through the system.

J. Nelson reported that there is no cable selected for the magnet PS monitor yet.

3. Saeed Madani reported that the fire rating for the PVIC daisy-chain cables is VW-1, which is acceptable for fire safety. However, the PVC material is a concern because of the potential for corrosive off-gasing. Saeed is at CERN presently and will consult with the manufacturer (who happens to be nearby) about possible alternatives to PVC.

Saeed also mentioned the need for some RS232 cables, which had previously been overlooked. He said that the DAQ group prefers to buy pre-assembled units, but it may be worthwhile to consult with Alec on using some of his excess RS232.

4. D. Saranen has located two vendors for riser-rated ethernet cables, but the cost is not lower than the cable originally proposed. K. Schuh will fax Dave a copy of the catalog page in which he found a lower-cost, non-halogenated cable.

Bids are pending on a cable for the GPS antenna feed. An armored cable running down the mineshaft is a candidate.

Action Items

1. J. Priest and K. Schuh will continue testing on the cable packet sent by J. Oliver. The committee will re-convene when they are ready to make a recommendation for mitigating the front end readout cables (No meeting next week if the studies aren't finished).

2. C. Velissaris will report the specifications of the Field-point unit for the DCS environmental monitors to ensure that the cables are adequate to withstand any current it might produce.

3. S. Madani will ask CES about alternatives to PVC insulation for the PVIC cables.

4. A. Habig and S. Madani should discuss the feasibility of using the same RS232 cable.