

SPES - Specific Services for CMS

Minutes of the meeting nr 20 held on 17/10/2001

Presents: R.Principe, N.Bangert, P.Giacomelli, H.Reithler, A.Hormiere, P.Wertelaers, I.Crotty, W.Van Doninck, R.Pintus, G.Faber, M.Jeske, A. Zschoppe, A.Sourkov, H.Postema, P.Bloch, P.Ingenito, R. Schmidt, A.Herve, L.Isaksen, I.Wichrowska-Polok.

1.MUON COOLING SYSTEM. (A. Zschoppe)

A. Zschoppe has presented another, less expensive solution for the distributor (see annexe1). He has compared the prices and space requirements for the old and new solution. The problem of the plastic connectors has been discussed. It has to be decided if those connectors can be used in chambers connections.

P.Wertelaers proposed to contact Marc TAVLET / TIS on the issue of radical formation in the (irradiated) water and possible attacks to thermoplastics.

The tests of 2 RPC/DT cooling circuits have been done in ILK. The cooling ducts have been simulated by means of glass pipes. The goals of investigations are: impact of trapped air inside hydraulic system in 3 different positions (30 °, 90 ° and 150 °); determination of optimal filling and bleeding regime and determination of the flow rate and mounting position.

2. STATUS REPORT ON PRESHOWER (SE) COOLING. (P.Wertelaers)

P.Wertelaers has presented the status report on the Preshower and its cooling. The task of the Preshower cooling system will be to keep Si sensors at the temperature -5°C or lower and to deal with heat dissipation from electronics. Preshower will be cooled by 2x2 large surface, flat cooling screens. There will be 4 pipes per endcap, 32mm of diameter (2 inlet and 2 outlet. Needed entrance temperature of coolant (C6F14) is -15°C. The total amount of heat dissipated in SE is about 10 kW per endcap (8 kW - Si detectors, electronics, voltage regulators; 1.5 kW- heat inleak through window foam; 0.14 kW- heat inleak through feedthrough station and 0.5 kW - heat inleak through outer drum). SE tank thermal time constant will be only 2.5 hours. To avoid the condensation, the foam insulation has been proposed (Armaflex : AF grade preferred for this application, but the NH grade is preferred by TIS).

The foam thickness need to be of 21 mm, with 32 mm of pipe diameter it gives 74 mm. This cause the problem, because not everywhere is there space for 74 mm. In places where thickness has to be reduced, artificial heating is necessary.

Finally the problems with pipe routing have been described. (see annexe2).

3. CALL FOR TENDER FOR THE COOLING OF THE YOKE. (L.Isaksen)

L. Isaksen has shown the list of the cooling system included in the market survey (see annexe 3). EE and EB systems should be added to the list.

Marked survey will out by the end of October, call for tender will out by February.

The provisional scheme of the HE cooling system has been shown. Lasse has prepared the independent cost calculation for the Muon cooling system. The total cost of the 5 wheels (including prices of manifolds, connectors) will be about 280kCHF (500kCHF calculated by A. Zschoppe).

Parker fittings has been presented as a solution for DT chambers.