Date: Mon, 27 Feb 2012 15:55:12 +0100

From: Dan Wenman <dwenman@psl.wisc.edu>

To: Paola Tropea <Paola.Tropea@cern.ch>

Cc: Wolfram Zeuner <Wolfram.Zeuner@cern.ch>,

Nebojsa Smiljkovic <Nebojsa.Smiljkovic@cern.ch>,

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Andrea Gaddi <Andrea.Gaddi@cern.ch>,

Norbert Frank <Norbert.Frank@cern.ch>

Subject: Re: Proposal for RE4 cooling manifold

Hi Paula,

Our components are the same as we used in demineralized water for ZEUS.

There were no problems at ZEUS. At CMS we have trouble with the brass

bushings in the flow restrictors. I believe that this problem was mostly do

to the stress concentration due the sharp undercut under the hex, but I can

not say that the DI water didn't contribute in the presence of the high

stresses.

I am sure SS will be much more expensive, but I will identify a comparable

SS version of the brass version.

Dan

On 2/27/2012 6:29 AM, Paola Tropea wrote:

> Dear Dan,

> sorry for the late reply, but I was not at CERN last week.

> Thanks for the detailed document!

> I will spend some time this week in reviewing the flow needed and the

> power consumptions, just to be sure that we have no surprises.

> For the manifold design: to me it looks ok, but we need the integration

> office (I put Andrea in the distribution list) to check if position and

> sizes are ok.

For the part list: we have just discovered the last problem with brass

> components on CMS cooling circuits in demineralized water. The metallurgy

> lab strongly advice not to use brass in demineralized water circuits and I

> would rather prefer following their suggestion then finding ourselves with

> new issues in a few years. Would all parts also be available in stainless

> steel?

> thanks a lot, best regards

> paola

>

> \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

> Paola Tropea

>

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Date: Mon, 27 Feb 2012 16:01:54 +0100

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Norbert Frank <Norbert.Frank@cern.ch>

Subject: Re: Proposal for RE4 cooling manifold

Hi Paola,

One component that may not be readily available in SS is the flow restrictor

with NPT threads. To aide in my search, do you know if other materials

might be compatible ie., maybe zinc free bronze? Maybe aluminum, but as I

recall we shouldn't mix aluminum and copper in the same circuit.

Date: Mon, 27 Feb 2012 16:47:34 +0100

From: Dan Wenman <dwenman@psl.wisc.edu>

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Subject: Re: Proposal for RE4 cooling manifold

Hi Andrea,

Thanks, I have asked my suppliers to look for either ZN-free bronze or SS

versions of the valves and flow restrictors.

Dan