

Zimbra

knudsen@jlab.org

Fwd: Re: ESR T1 Update

From : Peter Knudsen <knudsen@jlab.org>
Subject : Fwd: Re: ESR T1 Update
To : Mathew Wright <mwright@jlab.org>

Tue, Feb 25, 2014 02:25 PM

 1 attachment

Mat,

FYI.

I think we ended up using a tiny bit of bearing gas for T1.

----- Original Message -----

Subject: Re: ESR T1 Update
Date: Sat, 25 Sep 2010 12:55:21 -0400
From: Peter Knudsen <knudsen@jlab.org>
To: Roger Rabehl <rabehl@fnal.gov>

Roger,

FYI, Lutz Decker (LKT) told us that:

"T1 should not get any bearing gas at all.
TGL22 only needs bearing gas if it runs as a JT-turbine (same for TGL16).
(for clarification: new TED turbines need bearing gas.)
Therefore: If T1 starts without bearing gas it is fine.

T2 is a JT-turbine.

It needs bearing gas for start-up.
Pressure difference between bearing gas pressure and current process
pressure in turbine shall be within 3.0 to 12.0 bar.
Flow is adjusted inside the turbine.
Bearing gas filter has to be a 2 micron sintered filter.
This filter belongs to the turbine and therefore has to be supplied by
LKT to ensure proper turbine function.
(This filter information applies for all external gas feeds into the
turbine cartridge and brake system)."

Pete

Roger Rabehl wrote:

> Hi Pete -

>

> Thanks for the update. Glad to hear you're back up and running.

>

> That's interesting about the bearing gas. FYI, I believe we are not

> supplying bearing gas to either T1 or T2 on our cold box. I see

> capped lines in our cold box cabinet next to the original PCV-27 and

> PCV-28 tags where these bearing gas solenoids originally resided. I

> thought the use of dynamic gas bearings eliminated the need for

> external bearing gas supplies, but I'll see if I can find any

> additional information about this.

>

> Roger

>

> On 9/23/2010 12:49 PM, Peter Knudsen wrote:

>> Hi Roger,

>>

>> Just wanted to give you an update.

>>

>> On Saturday, we were able to spin your cartridge. The bearing gas

>> was reduced to just a weep. Linde actually said that it does not

>> require bearing gas (after the fact). So, although we have no idea

>> what change would have occurred to "unplug" the bearing gas flow,

>> presumably, for some reason for all these years, evidently we have

>> had little to no bearing gas to T1.

>>

>> On Monday, we installed a fine metering valve on the bearing gas

>> supply to T1 and the installed the refurbished cartridge from Linde

>> (we took out yours). Tuesday evening we started to cool-down to

>> plant to 80 K.

>>

>> Yesterday, we attempted to start T1. It came up to ~200 Hz initially

>> for a fraction of a second, then on each attempt thereafter to a

>> lower speed (spike). We removed the cartridge and installed yours.

>> The removed cartridge appeared to have good thrust bearings, but Dana

>> believes the radial bear is damaged.

>>

>> This morning, after reducing the bearing gas further (from


>> Wednesday's attempt), we were able to spin-up your turbine and the

>> plant is cooling down very well.

>>

>> Obviously there are some outstanding questions. We are planning to

>> send the 'refurbished' cartridge (from Wednesday's attempt) back to
>> Linde. Our old T1 has also been sent to Linde.
>>
>>
>> Pete
>>
>
>

 **knudsen.vcf**
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