

Lessard, Edward T

From: Travis, Richard J
Sent: Thursday, October 07, 2004 8:03 PM
To: Picinich, Ronald; Wu, Kuo-Chen; Lessard, Edward T; Durnan, James T
Cc: Kane, Steven F; Sandorfi, Andrew; Thorn, Craig; Muller, Thomas R; Curtiss, Joseph A; Travis, Richard J
Subject: LESHC 04-11, LEGS Beth Magnet - Precooling Inspection

All,

At the request of the Magnet Division, a meeting was held in the highbay of Building 902 to inspect the LEGS Beth Magnet and to determine what prerequisites were necessary prior to a cooldown. (The Magnet Division has been asked by Physics to troubleshoot the excessive use of LHe by this magnet.) The attendees were: Ron Picinich and Jim Durnan for the Magnet Division, K.C. Wu, Ed Lessard, and Rich Travis for the LESHC Cryogenic Safety Subcommittee. (Members of the Physics Department were invited, but because of the short notice, couldn't attend.)

Prior to cooling the magnet, the Magnet Division agreed to:

1. Contact the vendor for any updates on this magnet.
2. Review the vendor instruction manual, in particular any cooldown checklist.
3. Provide the Cryogenic Subcommittee with a cooldown and testing procedure that has been reviewed and approved by the Magnet Division. This procedure should integrate vendor information (i.e., actions 1 and 2 above) and specify a final magnet configuration at the conclusion of this cooldown test period.
4. Provide a plumbing diagram of the proposed return line to the Cryo Subcommittee.
5. Label the cryogenic lines.
6. Test the relief valves. (Jim Durnan agreed to witness the testing.)
7. Contact the Laboratory Electrical Safety Officer (Joe Curtiss) for an electrical safety review of the magnet and associated equipment. (There was a particular concern that all components be electrically bonded together.)

With the exception of the return line (# 4 above) the attendees agreed that any modifications to the magnet, including repiping the relief valves, would require Cryogenic Safety Subcommittee review.

Craig,

I understand that you are the Physics Department Point of Contact for this magnet. Prior to energizing the magnet (regardless of where this is done), please contact the LESHC Secretary (Rich Travis) to arrange for a Cryogenic Safety Subcommittee review.

Thanks!
Rich

From: Durnan, James T
Sent: Monday, October 18, 2004 12:02 PM
To: Picinich, Ronald
Cc: Curtiss, Joseph A; Ganetis, George; Escallier, John; Ribaldo, Paul
Subject: LEGS Electrical Review for Cryo testing only

Ron,

I had Joe Curtis from the Laboratory Electrical Safety Committee take a look at the LEGS magnet and he recommends that we run a bonding wire from a cover screw of the receptacle we are using for power to the frame of the power supply rack then to a ground point on the magnet, and finally to a ground point on the dewar.

Jim

E-mail: Durnan@bnl.gov

Phone: 344-5993

Cell Phone: 1-631-365-6116

Lessard, Edward T

From: Travis, Richard J
Sent: Thursday, October 07, 2004 8:03 PM
To: Picinich, Ronald; Wu, Kuo-Chen; Lessard, Edward T; Durnan, James T
Cc: Kane, Steven F; Sandorfi, Andrew; Thorn, Craig; Muller, Thomas R; Curtiss, Joseph A; Travis, Richard J
Subject: LESHC 04-11, LEGS Beth Magnet - Precooling Inspection

All,

At the request of the Magnet Division, a meeting was held in the highbay of Building 902 to inspect the LEGS Beth Magnet and to determine what prerequisites were necessary prior to a cooldown. (The Magnet Division has been asked by Physics to troubleshoot the excessive use of LHe by this magnet.) The attendees were: Ron Picinich and Jim Durnan for the Magnet Division, K.C. Wu, Ed Lessard, and Rich Travis for the LESHC Cryogenic Safety Subcommittee. (Members of the Physics Department were invited, but because of the short notice, couldn't attend.)

Prior to cooling the magnet, the Magnet Division agreed to:

1. Contact the vendor for any updates on this magnet. - COMPLETE *
2. Review the vendor instruction manual, in particular any cooldown checklist. - COMPLETE (confirmed with Jim Durnan 10/21)
3. Provide the Cryogenic Subcommittee with a cooldown and testing procedure that has been reviewed and approved by the Magnet Division. This procedure should integrate vendor information (i.e., actions 1 and 2 above) and specify a final magnet configuration at the conclusion of this cooldown test period. - COMPLETE* ,Jim Durnan has reviewed the procedure and finds it acceptable. (KC was asked to do a confirmatory review.)
4. Provide a plumbing diagram of the proposed return line to the Cryo Subcommittee.- COMPLETE *
5. Label the cryogenic lines.
6. Test the relief valves. (Jim Durnan agreed to witness the testing.)
7. Contact the Laboratory Electrical Safety Officer (Joe Curtiss) for an electrical safety review of the magnet and associated equipment. (There was a particular concern that all components be electrically bonded together.) - COMPLETE * , with the understanding that the ESO recommendations will be implemented prior to cooldown.

With the exception of the return line (# 4 above) the attendees agreed that any modifications to the magnet, including repiping the relief valves, would require Cryogenic Safety Subcommittee review. (Documented as a step in the cooldown procedure.)

Craig,

I understand that you are the Physics Department Point of Contact for this magnet. Prior to energizing the magnet (regardless of where this is done), please contact the LESHC Secretary (Rich Travis) to arrange for a Cryogenic Safety Subcommittee review.

Thanks!

Rich

* Reference: Jim Durnan's 10/21/04 email.

LEGS 1.8 TESLA BETH MAGNET

- Magnet and all associated items moved to 902.
- Pump down all transfer lines and magnet insulating vacuums to 10 - 7.
- Plumb in return to gas bag in 902 and install a check valve and gage in line.
- Pump and Purge magnet and 100 ltr storage dewar, using helium to purge.
- After safety review approval, start cool down.
- Cool down magnet and 100 ltr storage dewar using liquid helium all the way to operating temperatures. (This cool down is not described in the operators manual but is noted it can be done without a LN2 pre-cool)
- Control the rate of cool down with differential pressures and fill valve.
- Monitor temperature sensor in bottom of magnet for controlling rate of cool down.
- Get a base line reading on magnet for helium usage.
 - After magnet is at level and with 100 and 500 ltr. dewar keeping the magnet at level, take pressure and flow reading for magnet, with liquid loss in 100 and 500 ltr. dewar. (try to find out minimum dewar pressures needed to hold level in magnet)
 - After above magnet test remove 500 ltr. dewar and with 100 ltr. dewar keeping the magnet at level take pressure and flow reading for magnet, with liquid loss in 100 ltr. dewar.
 - Shut off fill from 100 ltr. dewar, take magnet level loss and flow meter and pressure reading.
 - **NOTE:** During warm up or if being left over night leave magnet ride on the gas bag return.
 - Note were problems exist and repair or change procedures.
 - Another safety review if a physical change in magnet.

- Another run to see if repair or procedure change was effective.
- Have safety committee review for powering the magnet.
- Power magnet.

After magnet is at level and with 100 and 500 ltr. dewar keeping the magnet at level, take pressure and flow reading for magnet, with liquid loss in 100 and 500 ltr. dewar. (power magnet and make sure Lead flow is efficient)

- After above magnet test remove 500 ltr. dewar and with 100 ltr. dewar keeping the magnet at level take pressure and flow reading for magnet, with liquid loss in 100 ltr. dewar. With magnet powered.

From: Michael Coffey [mcoffey@cryomagnetics.com]
Sent: Monday, October 18, 2004 2:49 PM
To: Picinich, Ronald
Cc: Harrison, Michael
Subject: RE: 1.8 Tesla Beth Magnet

Hi Ron -

I sent an email to you last week, but apparently to the wrong email address.
It's attached to this email.

The small pressure relief on the system is a 1 psi pop-off valve. The larger quench relief valve is a 4 psi. There shouldn't be any problem with putting either of these valves on an extension as long as it's not something very restrictive to the flow.

Let me know if you have any more questions.

Regards,
Mike Coffey

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

From: Picinich, Ronald [mailto:picinich@bnl.gov]
Sent: Monday, October 18, 2004 2:25 PM
To: mcoffey@cryomagnetics.com
Cc: Michael Harrison
Subject: 1.8 Tesla Beth Magnet

Mike,
My name is Ronald Picinich from Brookhaven National Lab. Your name was given to me by Steve Whisnant as a contact from cryomagnetics, that would be able to give me some information on the Beth 1.8 tesla magnet. I had left a phone message but you must be away. The information I need is for our lab safety committee. I need to know if there is or was any up grade or change in design in this type of magnet. I also need what the relief settings on the magnet are. If I move the relief's, put them with an elbow and pipe in the up wright position, would that compromise any warrantee or any other issue. I need these answers before the safety committee will let me cool this magnet down. This is a hot issue, to get this cooled down, your immediate help is appreciated
Thank you,
Ron Picinich

1.8 Tesla Magnet

