## SMH 16

date 1/03/2010

**installed in the PS:**

SMH16.2, Installed in PS 1/2010. Renovated with coils 11+10.

**Spare**

SMH16.3 Operational, not radioactive, with beam observation. Coil 13 in yoke 7 and coil 12 in yoke 8. Uses feedthrough No 12.

SMH 16.1 removed preventatively from PS ring 1/2010. Leak test of hydraulic circuit ok before removal. Coils installed are 7 + 8.

**Present state of the spares:**

- **Operational spare** newly build in 2007 SMH16.3. Coil 13 in yoke 7 and coil 12 in yoke 8. Uses feedthrough No 12. Beam observation is mounted but mechanics are to be tested to verify the connecting rod is of the correct length.

- **Operational spare**. SMH 16.1, removed from PS 1/2010 and very radioactive. Magnet to be renovated to replace. Beam observation incomplete (connecting rod missing).

- Chassis used for spares is different from the one in the machine, flexible stripline used in the PS is identical to the one used on the PISMH 42

- 2 completed and tested coils (coil number 9 +14).

- Coil 6 revealed an un repairable leak during repair of smh16.1. in 1999. In June 2004 this coil has been used to test a resin repair method. No leak detectable since, however the repair reduced the water flow by 30%. Together with the result of a brazing repair from 1999, the coil now only allows for 50% of the design water flow. This coil still needs to be tested by pulsing in a magnet, to assess the lifetime under load of a repaired coil like this.

- Tube/vacuum chamber at AT/VAC exists to replace the magnet in the PS (building 169).

- One further new spare coil manufactured, number 9, but this coil will still have to be adjusted to gap of the magnet where it will be fitted and chromed before it can be used.

**Procedure to replace magnet:**

Document to prepare the replacement and perform dose estimate and follow up was elaborated together with RP. Support chassis remains in PS, magnet including tank is exchanged.

**History**

| Tank | Yokes | Coils | Installation date | Removal date | remarks |
|---|---|---|---|---|---|
| SMH16.1 | - | 3+4 | 1/1994 | 1/1999 | Laminations sheared of yokes |
| SMH16.2 | | 1+2 | 1/999 | 5/2004 | Leak on hydraulic circuit $10^{-6}$ mbar.l/s |
| SMH16.1 | | 7+8 | 5/2004 | 19/7/2004 | Leak on hydraulic circuit 10-2 mbar.l/s Later repaired, when fault was traced to leaking braze on compensator. |
| SMH16.2 | | 2+10 | 19/7/2004 | 12/2004 | Preventive removal due to old age of coil 2 |
| SMH16.1 | | 7+8 | 2/2006 | 1/2010 | |
| SMH16.2 | 4+3 | 10+2 | 1/2010 | | |
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