Ref: Date: 16 March 1998

MEMORANDUM

From/De : G.K. Mallot, E. Rosso

To/à : J.-L. Denblyden, J. Blondel

Subject/Sujet : Clean room for COMPASS (NA58)

Copies : K. Peach, F. Bradamante, S. Paul

Following the discussions in the past weeks we summarize the minimal requirements for a clean room for the COMPASS experiment (NA58). The largest chambers to be handled in this area have a surface of 6×4 m^2 (h $\times$ v). The length (21 m) and height under hook (6.5 m) of the clean area are determined by the alignment procedure of the RICH mirror walls. The height could be reduced to about 5 m in case the RICH alignment is carried out elsewhere at CERN close the experimental hall 888.

The alignment of the mirror walls of the RICH detectors will require in addition the temporary installation of a dehumidifier, temperature control, and filters (class 1000) for a much smaller volume of order $6.5 \times 5 \times 2$ m^3 (w $\times$ h $\times$ d).

- **Surface:** 200 m^2 and a minimum length of 21 m. The present clean room in building 867 has 158 m^2 plus a *hall de montage* of 106 m^2. Originally we asked for 300 m^2 (Memo to W. Blum, September 1996).
- **Door:** Door 4 m wide and 6 m high. This is the height of the door in building 888. The height is required for the RICH mirror wall. Present door in 867: 5×5 m^2
- **Small door:** Double door forming a simple air lock, exists also in 867.
- **Crane:** A crane for 3.5 t. Presently in building 867: 5 t, in building 891: 7.5 t.

  Minimum height under hook 6.5 m to operate 6 m high objects. Presently in 867: 5 m, in building 891: 4.5 m.
- **Cleanness:** Moderate cleanness of class 10000.
- **Heating:** Normal heating and ventillation, no air conditioning.
- **Illumination:** Illumination as standard for a laboratory.
- **Electricity:** Electrical connections are needed at least in four locations in the clean room: $2 \times (4 \times 10$ A mono-phase), $2 \times (2 \times 16$ A mono-phase), $1 \times (1 \times 16$ A & 1×32 A tri-phase). One of the 16 A mono-phase connections and the tri-phase connections are needed at the same place for the vacuum pumps to test the polarised target refrigerator.
- **Gas:** Non-fammable gases in bottles and clean compressed air in a stand outside of the building. Apart from N_2, Ar, and CO_2 also CF_4 will be used. For cost reasons we do not ask for fammable gases now, which were used in 867. Maybe a smaller volume has to be equipped later with gas detectors, in case the final gas mixtures will involve also fammable gases.
- **Infrastructure:** Telephone and Ethernet connections.
- **He recovery line:** Extension of Helium recovery line from building 888. In 867 the Helium used for cryo tests of the polarised target was lost!