



Detector Cooling Project - The present M&O Agreement

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Scope (EDMS 688585)

1. SCOPE

This document defines the services that will be provided by technical Support Department for the maintenance and operation of the mechanical, electrical and control parts of the cooling systems delivered and the related costs. The concerned cooling systems are the following:

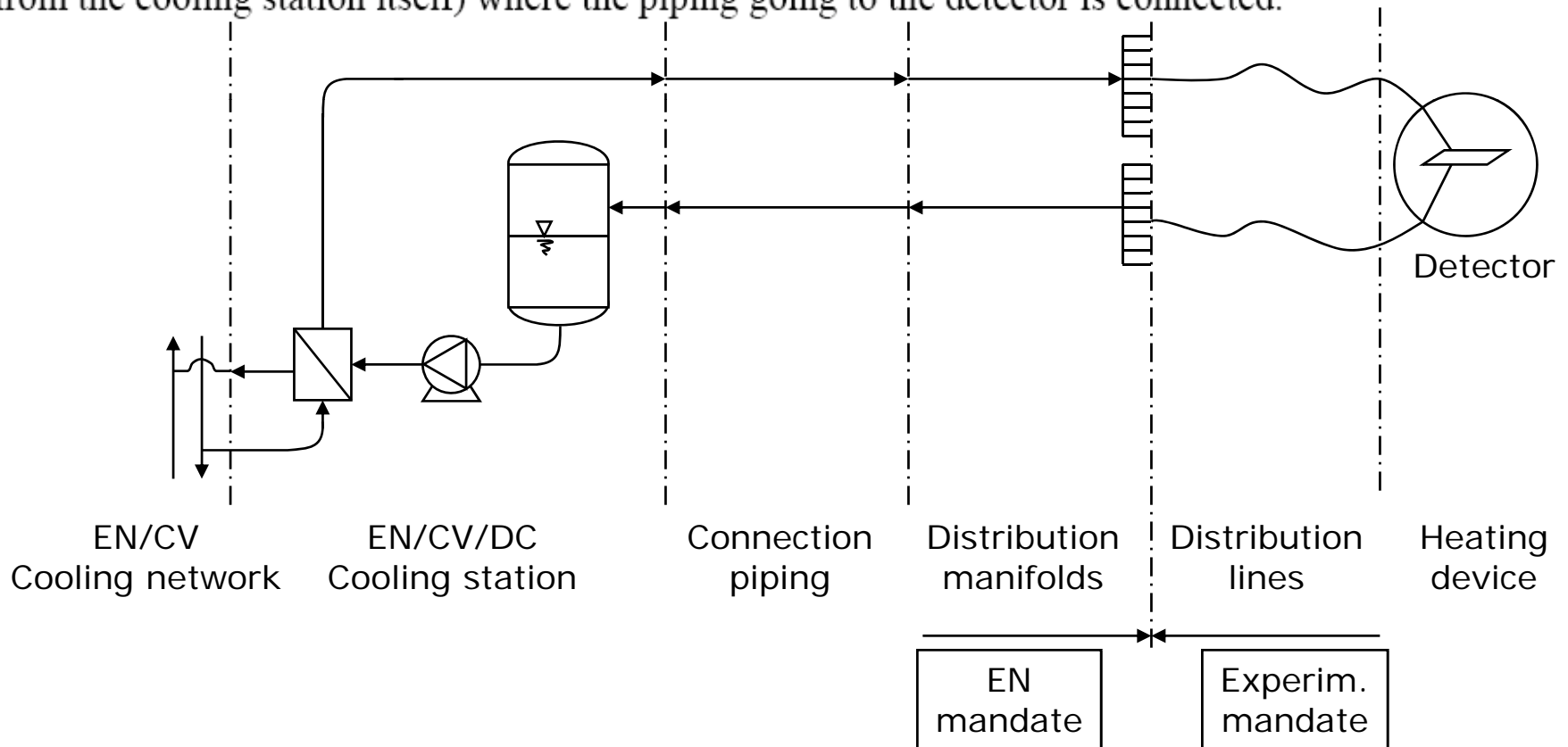
- ATLAS: USA15 and SR1 evaporative cooling systems, TRT cooling unit, Cables cooling unit, Tile Calorimeter cooling unit, Liquid Argon Calorimeter cooling unit, Diffusion pump cooling unit and Rod rack cooling unit. The launch of the Muon cooling system project will imply an update of this document.
- CMS: Tracker and Preshower cooling system, complete of chiller and tyfoxit units in USC55 and the 7 PFC cooling units (1 Pixel, 2 Silicon Strips, 2 Thermal Screen and 2 Preshower) in UX55; TIF cooling unit in bdg 186.
- ALICE: SPD cooling unit, SSD and SDD cooling unit, TPC cooling unit, TRD cooling units, HMPID cooling unit and TOF-PHOS-CPV-EMC cooling unit.
- LHCb: IT cooling unit, TT cooling unit, OT cooling unit and Rich1&2 cooling unit.
- TOTEM: evaporative cooling unit for the Roman Pots (L and R sides of point 5).

This document is complementary to the CERN/TS/HDO/BJ/2005-076 (EDMS 658953) of 07.10.2005 that describes the TS services and related costs concerning Power Distribution and Cooling and Ventilation. They refer actually to different installations and their maintenance will be managed by different teams.

Geographical limits

2.1 Limit of responsibility

The maintenance and operation activities will be limited to the equipments that have been installed by TS/CV/DC Section. In general this limit corresponds to the valve of the distribution manifold (close or far from the cooling station itself) where the piping going to the detector is connected.



Services

1. Preventive and corrective maintenance: PPM, CAMMS;
2. Stand-by duty service: 2 hours + two persons rule assured by the Experiment;
3. Operation: fine tuning, supervision;
4. Fluid management: level monitoring, procurement and refilling, quality monitoring;
5. Spare parts: store in bdg 264; consumables and “important components” (EDMS 848184) still under approval.

Duration

1. Tacitly yearly renewal;
2. 6 months notice (before June 30th)
3. Agreement other Experiments (share of fixed costs)

Resources and costs will be discussed in other meetings...

What we need to point out

1. Who is the M&O responsible for the installation?
2. Who provides the “installation supervisor” in conformity to the Safety Code A9?
3. Safety: a risk analysis shall be performed jointly
EN/CV/DC + Experiment

The garage-service story

1. I am the owner of 10 cars and I want to follow up the maintenance and operation by myself:
 - I decide if, when, where do the maintenance
 - I check by myself the oil level and the tires pressure
 - I pay the garage for any single intervention
 - I cannot blame nobody for the failures (a part proven bad maintenance)

2. I am the owner of 10 cars and I prefer to leave the management of their M&O to a specialized garage:
 - The garage decides if, where to do the maintenance
 - When the garage requires to do a service we agree on the schedule
 - I pretend guarantees on the performances/availability
 - I notice anomalies to the garage for them to check
 - I can blame the garage in case of failure and ask him to rescue out of working hours
 - I pay a forfeit plus spare cost in case of accident

M&O contracts

1. M&O contract with guarantee of means:
 - I decide if, when, where do the maintenance
 - I perform by myself the daily operations on my system
 - I pay a company to provide me manpower for operation assistance and preventive and corrective maintenance I plan for them
 - I pay all spare parts
 - The contractor guarantee me the means only

2. M&O contract with guarantee of performances:
 - I entrust the organization of the M&O to a company
 - I leave them define and execute the maintenance plans
 - I inform them of my planning constraints
 - I pretend guarantees on the performances/availability
 - When I notice anomalies and I suggest investigation and corrections
 - I pretend intervention inside or outside the working hours in case of failure
 - I pay a forfeit plus spare cost in case of accident