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QRL Installation and first Experiences of Operation

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The cryogenic distribution line (QRL) is divided in eight sectors, and each of them (about 3.2 km) is a continuous cryostat starting at the cryogenic interconnection box and ending at the return module. Each sector is sectorised in 9 vacuum subsectors, to easy installation and commissioning, and is composed of about 300 straight elements and 40 so-called service modules feeding the cryomagnets with helium at different temperature levels.

At present the installation of the QRL is complete for the first two sectors (sector 8-1 and sector 4-5) and under progress in four other sectors (sector 7-8 installed by CERN, and sectors 3-4, 5-6 and 6-7 installed by the QRL Contractor).

The technical objectives of the QRL installation have now been reached, such as 20 standard interconnections a week and helium leaktighness test of each subsector (about 400 m) in less than 3 weeks. The main technical choices for the installation are described in this paper together with the lessons learned and the improvement for the future.

The first two sub-sectors of the sector 7-8 (about 735 m) and the full sector 8-1 have already been warm and cold commissioned. They underwent to pneumatic tests, cooldown to nominal temperatures and heat inleak measurements. The main results of the commissioning of these two sectors are presented and compared to the values specified in the technical specification.

Based on the production rate of the QRL elements and the installation rate achieved up to now, it will be possible to complete the QRL installation before end of 2006.

Keywords: Present state and progress of installation; first experiences of cool-down (performance and conformity with technical specs.); critical issues. Schedule

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