



Contribution ID: 68

Type: Poster

Maintenance Method for Stable Operation of a Superconducting Rotating-Gantry

Wednesday 18 October 2017 16:00 (1h 30m)

At National Institute of Radiological Sciences (NIRS), carbon-ion radiotherapy has been carried out since June 1994. Recently, the world's first superconducting rotating-gantry was developed, and further installed in the new treatment facility at NIRS. This gantry equips ten superconducting magnets, and can transport carbon ions to an isocenter over irradiation angles of between ± 180 degrees. For cooling of the superconducting coil in the magnet, cryocoolers are employed; each magnet has three or four cold heads of cryocoolers, and totally 34 cryocoolers were employed for the ten magnets. The cryocoolers have to be continuously operated, however periodical maintenance of cold heads and compressors is required for every 10,000 and 30,000 hours, respectively. In the spring of 2017, we carried out the first maintenance of all the cold heads, while conducting the beam commissioning of the gantry before treatment operation starts. Having replaced and maintained all the cold heads, the superconducting gantry is now in clinical use since May 2017. In this presentation, we will introduce the maintenance method for stable operation of the cryogenic system for the superconducting gantry.

Author: Mr UCHIDA, Yasufumi (Accelerator Engineering Corporation)

Co-authors: Mr KATSUMATA, Masashi (Accelerator Engineering Corporation); Mr IWATA, Yoshiyuki (National Institute of Radiological Sciences); Mr NAKAJIMA, Takeo (Accelerator Engineering Corporation); Mr HARADA, Hiroyuki (Accelerator Engineering Corporation)

Presenter: Mr UCHIDA, Yasufumi (Accelerator Engineering Corporation)

Session Classification: 11- Poster Session

Track Classification: Maintenance for High Reliability