

Operation report 2016 for Nishina and RIBF water-cooling systems

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Operation condition

In FY2016, the Nishina and RIBF water-cooling systems were operated for six and five months, respectively. These operation periods correspond to the scheduled beam service time of RIBF, i.e., five months. In addition, Nishina's water-cooling system was used not only for full RIBF operation but also for the AVF standalone and AVF+RRC operations. During FY2016, there was no significant problem that resulted in beam service interruption for both Nishina and RIBF water-cooling systems. However, they were affected by minor problems.

Trouble report

Fortunately, we were not affected by the big trouble that canceled an experiment, but a water leak and cooling-water pump trouble occurred from a coupling and a connection part of the cooling plumbing. In addition, we encountered a movement defectiveness of the control valve which was damaged by radiation during the operation of the accelerator, and a trouble in the inverter for cooling-water pumps due to deterioration with, age accelerator driving depended on got up.

Periodic maintenance

Routine maintenance works listed below were performed during the scheduled summer and winter maintenance periods of the RIBF accelerators.

- 1) Cleaning of the cooling towers
- 2) Inspection and overhauling of the cooling-water pumps
- 3) Touch panel exchange for RIBF cooling system control
- 4) Inspection of the inverter of the RIBF water-cooling pumps
- 5) Inspection and overhauling of the air compressor
- 6) Replacement of some superannuated hoses, joints and valves used in the system
- 7) Cleaning of the strainers and filters used in the deionized water production system
- 8) Extension of the sensing wires of the water leakage alarm to floors of new areas

As usual, 2-3 times go the work that pro-backup, changes electricity and a cooling installation in a year during an accelerator outage to be affected by cooling facilities than a stop of steam and the cold water by rolling blackouts of RIKEN inside and a periodic inspection of the co-generation in the Nishina Center.

Establishment and improvement

With the cooling facilities, we performed coolant pipelaying for K1 electromagnets in addition to the update of the absorption-style refrigerator, the transference construction of the turbo system in the refrigerator this year. A high strength would improve the ability to cool the Faraday cup G01 which is a future plan, and RILAC upgrade plans the laying construction of cooling facilities for setting of cooling facilities for Helium refrigerator facilities for becoming it, GARIS2 to transfer.

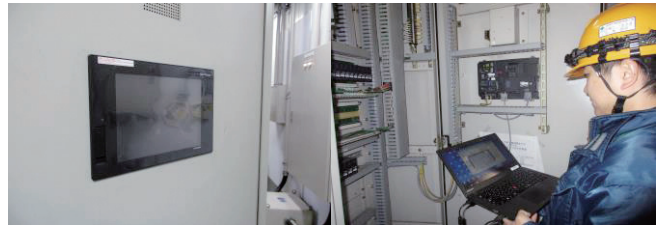


Fig. 1. Photograph of the touch panel exchange for control.



Fig. 2. Photograph of the inspection of the control system of the RIBF water-cooling system.

References

- 1) K.Ozeki et al., RIKEN Accel. Prog. Rep. 49 (2015) pp139.
- 2) T. Maie et al., RIKEN Accel. Prog. Rep. 49 (2015) pp143.
- 3) T. Maie et al., RIKEN Accel. Prog. Rep. 48(2014) pp197.

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