

## “Zinc Injection from Hot Functional Test in Tomari Unit 3”

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This is a presentation concerning Zn injection in a hot function test at the Tomari Nuclear Power Plant Unit 3 of the Hokkaido Electric Power. Zn injection was carried out in 1994 for the first time at Farley Unit 2 in the U.S., and recently, its application to Tsuruga Unit 2 in Japan was started. A dose rate reduction of approximately 50% is considered to be possible by Zn injection. Although Angra Unit 2 of Brazil in 2000 is cited as a case of the application of Zn injection from the start of commercial operation and it shows a remarkable reduction in dose rate, Zn injection from test operation was implemented for the first time in the world at Tomari Unit 3.

The hot function test of Tomari Unit 3 was carried out from September to November, 2008. In a hot function test, the temperature of the primary system is raised to approximately 300°C which is close to the operating temperature with the fuel unloaded, and the normal performance of all equipment is checked. Tomari Unit 3 adopts for the material of SG heat exchanger tube the TT690 material which is considered to excel in corrosion characteristics. In Tomari Unit 3, the aim is to further reduce the corrosion release of Ni from SG and also reduce the Co-58 to dose rate by applying improved water chemistry (hydrogen + Li added) at the time of a hot function test together with the implementation of Zn injection. The reduction of dose rate is expected to be approximately 10%.

In the future, a comparison of corrosion product concentration and dose rate between Tomari Unit 3 and other plants to which Zn injection have not been applied will be carried out.

