

## **Tritium concentration in environmental samples around the Rokkasho Reprocessing Plant**

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Aomori Prefectural Government (Aomori Pref.) and Japan Nuclear Fuel Limited (JNFL) have been carrying out tritium surveillance of many kinds of environmental samples around the Rokkasho Reprocessing Plant (RRP) as part of environmental radiation monitoring. Similarly Aomori Pref. and Tohoku Electric Power Co., Inc. have been carrying out the surveillance around the Higashidori Nuclear Power Station. In addition, a detailed investigation of TFWT and OBT in biological samples have been carried out by Aomori Pref. and JNFL since 2007. Several results that exceeded the background levels of environmental tritium were observed since the final commissioning test using actual spent nuclear fuels have been started at RRP on March 31 2006. Therefore, we examined the cause of the results by considering operational status of RRP and meteorological or hydrographic conditions.

Tritium concentrations in water vapor collected at Obuchi area in March and April 2007 rose to 3 Bq/L. In this period, tritium had been discharged from RRP, and the westerly wind had blown toward Obuchi area predominantly. And there was positive correlation between tritium concentration and concentration of <sup>85</sup>Kr measured at this area. It is suggested that the tritium concentrations were affected by radioactive gaseous waste discharged from RRP. Tritium concentrations of some seawaters collected in front ocean of the Higashidori Nuclear Power Station were 3 - 4 Bq/L in October 2007 and October 2008. Also tritium concentrations in fishes collected in front ocean of Rokkasho-mura in October 2007 and October 2008 were 2.3 and 3.3 Bq/L as TFWT, 1.2 and 1.4 Bq/L as OBT (concentration in combustion water), respectively. It is suggested that the results were affected by radioactive liquid waste discharged from RRP, because the ocean current had predominantly flowed from the marine discharge point of RRP to sampling areas of the seawaters and the fishes before sampling date.

The committed effective dose estimated by using the results affected by RRP was far below the annual dose limit for the public (1 mSv).