AMPCO Interrogatory #84

Interrogatory

Reference: Ex D2 T2 S10 P8

The purpose of the D2O Storage Project includes providing 400 m3 of storage to improve ongoing heavy water operations at Darlington and at the Tritium Removal Facility (TRF). The TRF provides detritiation services (i.e., the process of removing excess tritium from moderator and PHT systems in CANDU 7 reactors to stay within operating and regulatory limits) to all the operating nuclear generating stations in Ontario.

Ref: Ex D2 T2 S10 P11

With regard to TRF operations, the additional capacity created by the D2O Storage Project will: (1) allow greater storage of TRF feed and product to address any gaps between TRF availability and the demand for tritium removal, (2) enable the storage of additional heavy water to address periods when the TRF is undergoing an outage, (3) facilitate a more flexible schedule for heavy water shipments to and from Pickering and Bruce, and (4) potentially assist with heavy water management once Pickering operations end.

a) How many reactors did TRF provide detritiation services to at its inservice date of 1989?

b) How many reactors was TRF supporting in 2005?

c) How many reactors will TRF be supporting at the end of 2025?

d) Prior to the D2O Storage Project, what was the existing heavy water storage capability at Darlington and at the TRF in terms of volume and number of drums?

e) Please provide the economic assessment/cost benefit analysis related to improving ongoing heavy water operations at Darlington and at the TRF.

f) Please provide the business case for TRF operations to assist with heavy water management once Pickering operations end.

Response

a) The TRF provided detritiation services to 16 reactors at its in-service date of 1989 (8 units at Pickering and 8 units at Bruce Power).

b) The TRF was supporting 16 reactors in 2005 (6 units at Pickering, 6 units at Bruce Power and 4 units at Darlington).

c) The TRF will be supporting 10 reactors at the end of 2025 (7 units at Bruce Power, and 3 units at Darlington). Of note, the TRF will also continue to support post-operations requirements for management of Pickering heavy water.

d) Prior to the D2O Storage Project, the existing heavy water storage capability at Darlington and at the TRF (i.e., at the Darlington Heavy Water Management Building) was 943Mgs and approximately1500 drums.

e) The Tritium Removal Facility life extension is still in the planning stage of the project life cycle process. The investment has been assessed according to the Asset Management process described in Ex. D2-1-1, Section 3.0. The economic assessment and value framework relating to ongoing heavy water operations at Darlington is provided in Ex. L-D2-01-SEC-52, Attachment 2.

f) Since the TRF project is in its planning phase, the business case for TRF operations to support heavy water management is being developed. The conceptual project design engineering is in progress and the initial TRF life extension business case for release of preliminary engineering is scheduled to be completed by 2021 year-end.