Q. **Re Upgrade Gas Turbine Plant Life Extension - Hardwoods, page B-2**

What is the anticipated useful life in operating hours with a gas turbine and how many hours has the Hardwoods gas turbine operated?

A. Hydro does not have any available data on the useful life in operating hours of a gas turbine operated as a peaking unit. The anticipated useful life of a gas turbine which operates as a peaking unit, rather than a base-loaded unit, is affected more by the number of start-stop cycles and the rate of internal corrosion then by the number of generating hours. Hardwoods gas turbines have always operated as peaking units, with very few generating hours, but many start-stop cycles for operating the plant for synchronous condensing. In addition the rate of internal corrosion for a gas turbine installed at Hardwoods is higher then what it would be for many other machines installed throughout the world. Hardwoods is a coastal location and the internal components of gas turbines at that site are exposed to damp and cold outside air. The effects of the damp and cold air are compounded when the gas turbine is not running (i.e. not hot). The installed location of the gas turbines at Hardwoods in conjunction with their mode of operation contributes to accelerated corrosion and subsequent deterioration compared to many other climates.

Operational data for Hardwoods gas turbine is available from January 1, 1991 to June 1, 2009. During this time period of 18.4 years, the total generating hours were 1,303 hours.