Q. Hydro previously experienced boiler complications due to fuel quality, including high sulphur and vanadium. Please describe the connection, if any, between past fuel quality issues and present boiler issues.

A. Oil ash corrosion was the principle wastage mechanism for the reheater tubes in the boilers of Unit 1 and Unit 2. This was also true for the superheater tubes that were previously replaced in both of these boilers. Oil ash corrosion attacks tubes where the metal temperature is sufficiently high, as is found in the reheater and superheater of the Unit 1 and Unit 2 boilers. This corrosion mechanism also requires elevated levels of constituents such as sulfur and vanadium in the oil, as was present in the old fuel.

The reheater and superheater tube sections that were damaged by oil ash corrosion will have all been removed from the boilers once the lower reheater tubes are replaced. The old fuel also resulted in slagging and related erosion and corrosion of boiler tubing. These mechanisms will have caused some tube thinning, which may still exist in the boilers. All fuel can cause some tube damage in some areas of boilers over time. The switch to the current fuel will have eliminated or reduced the rate of damage accumulation.