Abstract

Boilers are important for steam generator in the power plant. Failure of water wall tubes is a very common phenomenon in a power plant such as breaking (fissuring), cracking and bulging tube and to other failures.

Hence, this research discussing main root cause of the failure, which might be deduced from the findings obtained by metallurgical aspects, it had been inspected step by step such as macro and micro visual observation, hardness test, thickness test on tube, and chemical composition test. For identify remaining life time in the material used to ERA technology method.

Based on the results, it is known that the failure of water wall tube due to corrosion of oxygen and sulfur early, it occurs in the form of metal elongation and considerable reduction in the wall thickness. Practically, tube wall failure thinning and local bulging often proceeded by the softening of material at elevated temperature and the internal pressure from the feed water then that deposits gather on the fire side, the section of tube surface was not sufficient to sustain the pressure. All those problems are caused by permanent deformation. So life time for the boiler is less than about 1.5 month, which is day of remaining from the overhaul 26 march 2011 at 12:00 pm.

Keywords: Failure Analysis, Remaining Life Assessment, STB 42, Water wall Tube.