

Following the 2011 Great East Japan Earthquake and subsequent tsunamis, there has been an increasing demand for diversification in nuclear power plant facility cooling methods, and in an increasing number of cases air is being used in place of seawater to cool equipment.

1

Nuclear power plants are equipped with diesel power generation equipment to be used for emergency power generation in the case of an accident or other such circumstance that prevents the regular provision of electricity, and seawater is often used as the coolant for these diesel generation facilities.

However, in order to diversify cooling methods in pursuit of greater levels of safety, an increasing number of plants have adopted air fin coolers (AFCs). There is a high demand for cooling facilities that remain undamaged even in the event of an earthquake, thus preserving cooling capabilities.

In consideration of such demand, we at Kawasaki have improved the earthquake resistance of our AFCs.

2 AFC

(1) S

Our AFC's external appearance and form are shown in Fig. 1. In general, AFCs comprise the following components:

- Tube bundles
- Fan
- Motor and reduction gear
- Fan ring



concentrations of stress.

The presence or lack of sufficient structural rigidity is determined using eigenvalue analysis: requirements as of late call for values exceeding 33 Hz, and through the abovementioned improvements eigenvalues for the fan ring and tube bundle framework have, as shown in Fig. 3, fulfilled structural rigidity requirements.

4

Our AFCs are equipped with louvers designed to provide a countermeasure to snow accumulation. In order to enable proper exhaust of hot air generated by the heat exchange process regardless of snow accumulation on top of the equipment during the winter, the upper louvers are closed

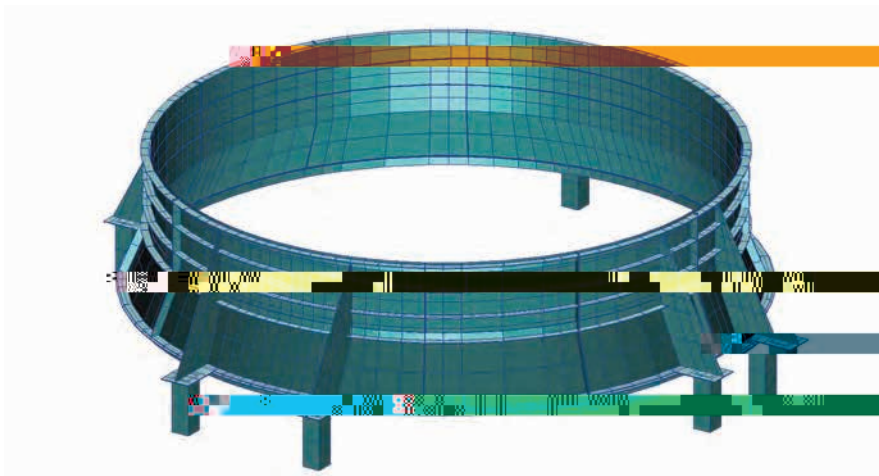


Fig. 2 Seismic analysis model of fan ring

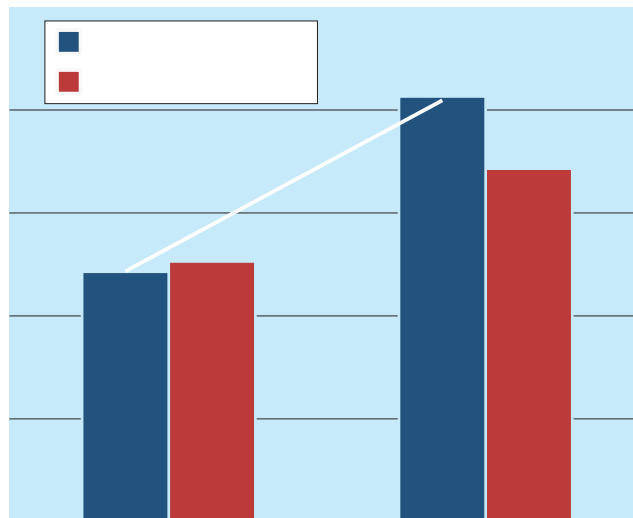


Fig. 3 Rise in eigenvalues after improvement

