

Fig.5.1-19

**Current status**

- (1) Since start-up/shutdown is so frequent, there have been various kinds of damage and accidents on the motors such as the bearing metal, the stator surface according to the rotor by this bearing metal damage (short circuit of the laminating silicon steel plate), and melting of the connection section of rotor end ring and coil.
- (2) Since an interlock is not provided, restrictions of start-up motor are not protected. As a result, degradation of equipment is brought about.
- (3) Repair correspondence in the power plant is difficult for failure of the short circuit of the silicon steel plate, melting of the end ring, etc., and the power plant depends on other countries such as Russia etc. for those repairs.

Improvement plan

The motors of FDF and IDF for No.1 to 8 boilers are to be replaced with new ones equipped with an interlock system.

Fig.5.1-20

**Current status**

Present HV switchgears are of OCB type and because they are an old type, there have been problems, such as spare parts unavailability and frequent malfunctions.

Improvement plan

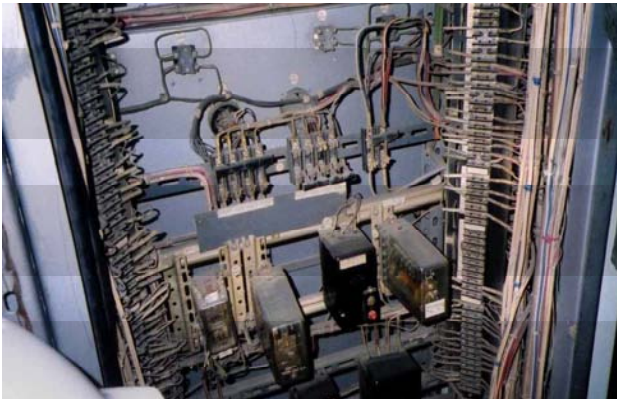
HV switchgears, especially those with a high frequency of fault, will be replaced with new ones of VCB type.

**Current status**

Present HV switchgears are of MBB type and because they are an old type, there have been problems, such as spare parts unavailability and frequent malfunctions.

Improvement plan

The LV switchgears important for auxiliaries equipment of boilers and turbines will be replaced.

**Current status**

(1) The present generator protection system equipment is made in Russia.

It was superannuated and problems, such as its incorrect operation, have increased significantly.

(2) Because of spare parts unavailability, repair and setting changes are very difficult.

Improvement plan

All the protection relays of No. 1 - 6 generator will be replaced.