

**ELECTRIC POWER
RESEARCH INSTITUTE**

Condenser Plug Selection Criteria¹

7.1 Tube Plugging

If it has been established that the in-leakage has been caused by a tube failure, the unit can be rapidly returned to service by plugging the leaking tube. Condenser design is such that there is typically excess surface area available in the form of extra tubes to allow as many as 10% of the tubes to be plugged without reducing the effective heat transfer capacity of the unit.

There are many different types of condenser tube plugs to choose from. Keep the following considerations in mind when selecting plugs:

- The plug should be permanent and leak tight for the life of the condenser. At the same time, the plug should easily be removable for retubing.
- The plug installation process should be controllable and the action of installing the plug should not damage the tube, tubesheet ligaments, tube joints, or the epoxy coatings applied to the tubesheet and/or tube.
- The plug itself should be constructed of materials that are rated for an infinite life of continuous duty in the condenser environment. The plug materials should resist any corrosion and aging effects that might cause leakage.
- The ideal condenser plug should not require periodic retightening and inspection to verify that they are leak tight.
- The plug should resist pressure from either direction.

In situations where previously installed plugs are missing, are leaking, or have caused collateral damage to the tube and tubesheet, the actual plug cost should not be a major factor. The expense associated with controlling persistent water in-leakage as a result of tube and plug leaks may be many times the cost of even the most expensive plug.

Finally, when plugging tubes, be sure that tube plugs are placed at both ends of the same tube.

[Read Full Condenser In-Leakage Guideline](#)

¹ *Condenser In-Leakage Guideline, EPRI, Palo Alto, CA: 2000. TR-112819 Page 7.2*