

Blistering test under the pressure condition in hot cell

Wang Zhen, Zhu Wei, Wen Bang, Zhang Hai-sheng and Fang Zhong-qiang

Nuclear Power Institute of China, Chengdu city, China

Corresponding author: Wang Zhen <wangzshu@126.com>

The blistering temperature is an important parameter of the plate type fuel assembly after irradiation, which affects its safe operation. How to increase the blistering temperature of fuel assemblies is an important aspect of fuel development.

At present, the widely used method of measuring the blistering temperature is to heat to a certain temperature under the condition of atmospheric pressure, and then take out for the observation. This method has a disadvantage that it is impossible to obtain a blistering temperature under pressure condition close to the actual service pressure, which affects the performance evaluation of fuel assemblies.

In order to obtain the blistering temperature under a certain pressure condition and study the formation process of the blister, a set of automatic blistering test device with pressure in a hot cell was designed. The equipment has been proved to be functional, and some interesting data are obtained, which can help to promote people's understanding of blistering behavior.

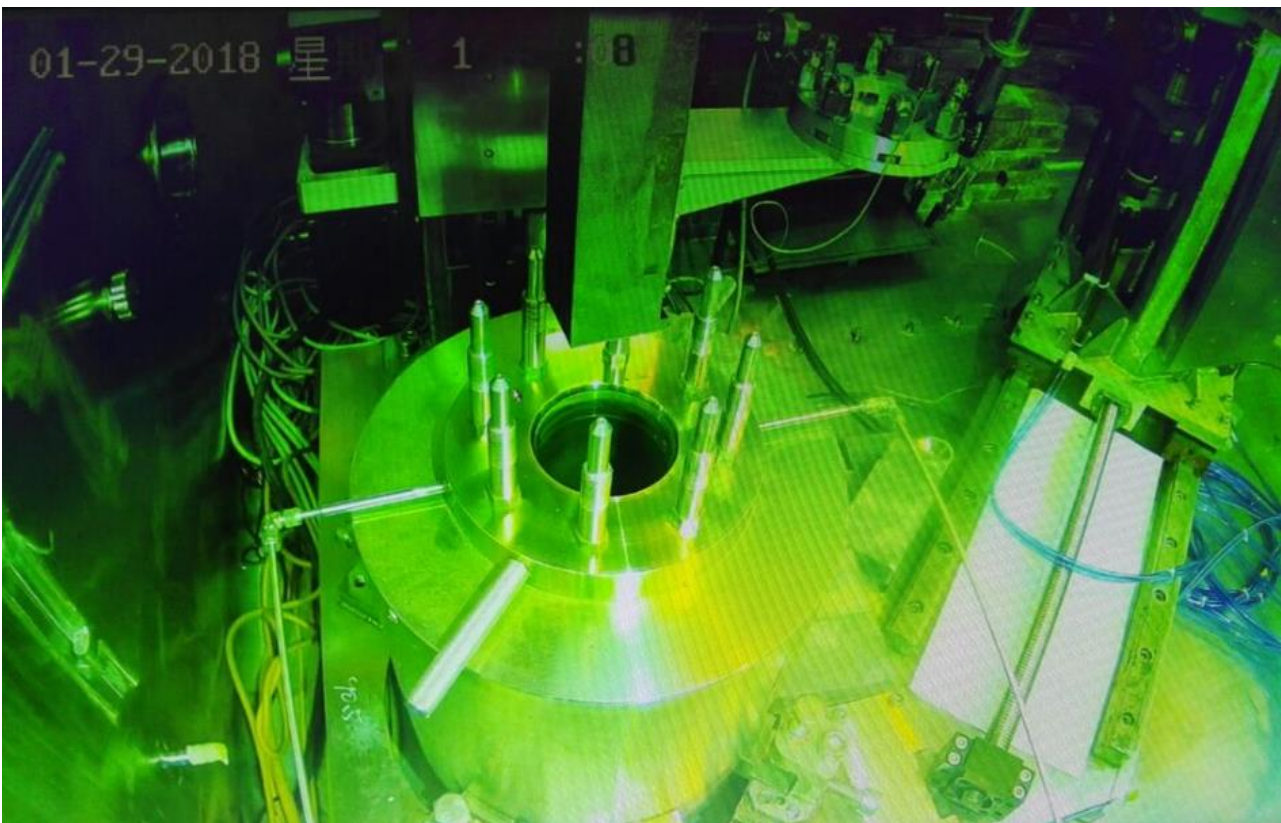


Figure 23: Automatic blistering test device