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## 脉冲反应堆失水事故分析

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**摘要** 针对脉冲反应堆的特点,建立了脉冲反应堆失水事故的数学模型,编制了脉冲堆失水事故仿真分析软件XPRLOCA。该软件具有可视化的图形人机界面接口和实时仿真功能。利用XPR LOCA对西安脉冲堆的失水事故进行了分析计算。失水情况下的分析计算结果表明:当破口标高低于堆芯下栅板、破口直径不大于26mm时,燃料温度和包壳应力均低于安全限值;破口标高高于堆芯下栅板或破口直径大于26mm时,必须采取应急补水措施;在失水情况下,应确保燃料最高温度低于900℃。

**关键词** [失水事故](#) [脉冲反应堆](#) [模型](#) [实时仿真](#)

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## Analysis of Loss of Coolant Accident for Pulsed Reactor

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**Abstract** To evaluate the safety characteristics of pulsed reactor under LOCA (loss of coolant accident), an analytical model of LOCA is developed and an advanced code XPRLOCA with friendly interactive interface and real time simulation function is coded for simulating LOCA. The calculating results of LOCA for Xi'an pulsed reactor show that when the break is below lower grid plate and the break diameter is smaller than 26 mm, the reactor core is safe. Otherwise, the emergency core cooling system has to go into operation, the maximum temperature of fuel must be below 900 °C under the LOCA condition.

**Key words** [loss of coolant accident](#) [pulsed reactor](#) [model](#) [real time simulation](#)

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