

Pacific Northwest Laboratories(PNL), and critical experiment data from Shanghai Nuclear Institute, checking calculation of AMPX-KENO Monte Carlo program is performed. The errors of k_{eff} values are less than 2 % for most schemes, less than 3 % for very few schemes. Critical water level of Heavy Water Zero Power Reactor(HWZPR) is calculated by this program, and difference of k_{eff} values between the calculation and the measurement at initial criticality is less than 1 %. Numerical calculation results show that AMPX-KENO program is applicable to the criticality calculation for rod lattice systems with the fuel of low-enriched or natural uranium, with moderator of light water or heavy water.

Key words AMPX-KENO program Critical analysis Application

日本原子能研究所开发出放射性废物处理技术

日本原子能研究所开发确立了熔化绝热材料、陶瓷、混凝土碎块等放射性固体废物,并使之固化的高减容技术。用该技术可以将金属废物减容到六分之一,将杂固体废物减容到三分之一。日本原子能研究所计划2001年在东海分所建成减容处理设施。据说,该技术也可以用于核电站和与原子能有关设施的解体、维修时产生的低放废物的处理。

日本原子能研究所开发确立的减容技术采用高频诱导熔融和离子体熔融复合技术方式。各自可以单独工作,也可以处理未燃烧气体和腐蚀性气体。使用模拟的碳钢与铜等金属、混凝土、石膏板、玻璃、橡胶、塑料、木头、纸等核电站保管的废物材料与放射性同位素示踪剂,确认了该减容技术的有效性。

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