

反应堆工程

中国百万千瓦级核电站严重事故下堆芯损伤评价

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摘要 应用一体化严重事故分析程序MELCOR1.8.5进行模拟分析, 研究了由西屋公司制定、经美国NRC (Nuclear Regulatory Commission) 认证的“堆芯损伤评价导则 (CDAG)” 应用于中国百万千瓦级核电站在严重事故初期评价堆芯损伤状态和程度的有效性。初步分析结果表明, CDAG可较好地评价百万千瓦级核电站无缓解措施的冷却剂丧失事故 (LOCA) 堆芯损伤状况和损伤程度, 对进一步研究和验证CDAG的综合评价能力和适用性、推进现有核电厂建立严重事故管理导则具有重要的参考价值。

关键词 [堆芯损伤评价](#) [严重事故](#) [MELCOR程序](#) [冷却剂丧失事故](#)

分类号

Core Damage Assessment for Chinese 1 000 MWe NP P Under Severe Accident Conditions

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Abstract By simulation analysis with the integral severe accident analysis code MELCOR 1.8.5, the applicability of the Westinghouse Owners Group Core Damage Assessment Guidance (CDAG) to estimate the status and extent of the core damage in the early phase of the accident for a typical Chinese 1 000 MWe NPP was investigated. The preliminary analysis results show that CDAG can reasonably evaluate the core damage status and extent for the 1 000 MWe NPP in a loss of coolant accident (LOCA) without mitigation measures. The insights gained from the present study are of significant values for further studying and validating the comprehensive assessment capability and applicability of the CDAG, and for advancing the establishment of the severe accident management guidelines (SAMGs) of existing plants in China.

Key words [core](#) [damage](#) [assessment](#) [severe](#) [accident](#) [analysis](#) [MELCOR](#) [code](#) [loss](#) [of](#) [coolant](#) [accident](#)

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