Analysis of irradiated UO2 and MOX fuel composition data measured in REBUS program
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1. Introduction
   Critical Experiments with UO2 and MOX fuels irradiated in LWR commercial plants were performed in the
   REBUS international program. We performed burnup calculations for irradiated fuels with the nuclear library
   JENDL-3.2 in the analyses of the critical experiments. The irradiated fuels used in critical experiments were
   MOX fuel irradiated in the BR3 PWR plant (BR3-MOX), MOX fuel irradiated in the Gundremmingen BWR
   plant (GUN-MOX) and UO2 fuel irradiated in the GKN-II PWR plant (GKN-UO2). The fuel compositions of
   three samples taken from the irradiated fuels were measured at the hot laboratory in SCK/CEN. We have
   been studying the analysis method including nuclear data through the comparison between the calculated
   and the measured composition data, in which burnup calculations were performed with SRAC and MVP-BURN
   codes.

2. Summary of Study
   The burnup of measured fuel samples are about 20 GWd/t in BR3-MOX, about 62 GWd/t in GUN-MOX
   and about 54 GWd/t. We compared the calculated values and the measured values for the measured actinides
   and FPs shown as the follows.
   - Actinide nuclides:
     U : U-234, U-235, U-236, U-238
     Np : Np-237
     Pu : Pu-238, Pu-239, Pu-240, Pu-241, Pu-242
     Am : Am-241, Am-242m, Am-243
     Cm : Cm-242, Cm-243, Cm-244, Cm-245
   - FP nuclides:
     Ce : Ce-144
     Nd : Nd-142, Nd-143, Nd-144, Nd-145, Nd-146, Nd-147, Nd-148, Nd-150
     Sm : Sm-147, Sm-148, Sm-149, Sm-150, Sm-151, Sm-152, Sm-154
     Eu : Eu-153, Eu-154, Eu-155
     Gd : Gd-155
     Cs : Cs-133, Cs-135, Cs-137
     Metal FPs : Mo-95, Tc-99, Ru-101, Rh-103, Pd-105, Pd-108, Ag-109

   The results of our study will be presented in the conference.