

**Title:**

**Development Status of FeCrAl-ODS Cladded Accident Tolerant Fuel for BWRs**

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**Abstract:**

The FeCrAl-oxide dispersion strengthened (ODS) alloy is a promising candidate alloy for the accident tolerant fuel (ATF) cladding of light water reactors (LWRs) and has been recently developed in Japan. This paper reports on the progress of the development of accident tolerant FeCrAl-ODS fuel claddings for boiling water reactors (BWRs) in Japan.

Both experimental and analytical studies were conducted to evaluate the influence of implementation of the FeCrAl-ODS fuel cladding to the current BWRs.

In the experimental study, key material properties of FeCrAl-ODS fuel cladding have been obtained and accumulated to support the evaluations in the analytical study. Effect of neutron irradiation on mechanical properties were also evaluated by irradiation tests at a test reactor.

In the analytical study, in order to evaluate the influence of implementation of the FeCrAl-ODS cladding to the current BWRs, the core characteristics and the fuel behavior were evaluated in the analysis study at the normal operating condition. The merits of applying FeCrAl-ODS cladding to BWRs were preliminary evaluated by the MAAP 5.05b code with and without accident management.

Although research and development efforts are steadily advancing toward practical implementation, further research and development is still needed. At the end of the presentation, to proceed the practical implementation of the FeCrAl-ODS fuel cladding, the challenges and perspectives found in the program will be outlined.

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