|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Cladding Performance  Parameters | Zr alloy  (Standard) | SCWR Criteria | Comments | Reference # |
| Maximum Operating Temperature (C°) |  |  |  |  |
| Neutron absorption cross section |  |  |  |  |
| Clad manufacturability  (low cost; low complexity) |  |  |  |  |
| Coolant cladding chemical interaction/degradation |  |  |  |  |
| Creep  (thermal or irradiation) |  |  |  |  |
| Operational lifetime |  |  |  |  |
| Lifecycle net cost of fuel system |  |  |  |  |
| High strength / ductility |  |  |  |  |
| Longer coping times during LOCA |  |  |  |  |
| Hydrogen generation in LOCA  (exothermic reaction rate in steam) |  |  |  |  |
| Power uprates |  |  |  |  |
|  |  |  |  |  |
| Desirable Cladding Performance Parameters |  |  |  |  |
| Melting Point(C°) |  |  |  |  |
| Density (g/) |  |  |  |  |
| Heat capacity |  |  |  |  |
| Unirradiated thermal conductivity (k) @300 C°(W/m K) |  |  |  |  |
| Clad swelling |  |  |  |  |
| Fission gas release |  |  |  |  |