

8. A boiling water nuclear reactor system, comprising:
- a reactor pressure vessel;
 - a reactor core disposed in the reactor pressure vessel;
 - a core shroud surrounding the reactor core;
 - a downcomer region disposed between an inner surface of the reactor pressure vessel and the core shroud;
 - a steam line connected to an upper end of the reactor pressure vessel;
 - a turbine receiving steam from the reactor pressure vessel;
- and
- a main condenser system receiving the steam from the turbine and connected to the reactor pressure vessel by a feedwater return line for returning condensate from the main condenser system, the feedwater return line selectively returning condensate inside the core shroud above the reactor core into one or both of an upper plenum or chimney region of the core shroud.
9. The boiling water nuclear reactor system according to claim 8, wherein the feedwater return line includes a first split portion that returns condensate inside the downcomer.