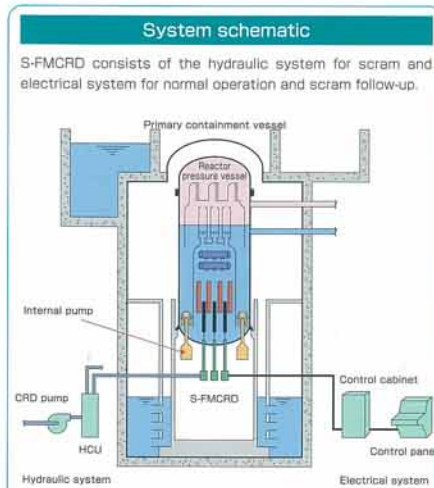


## Simplified hydraulic system and the newest electrical system for reliability and operability

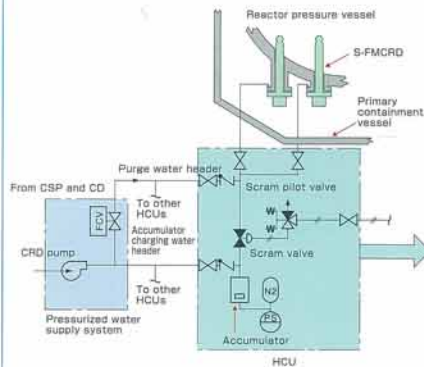
### Control rod drive water system

Control rod drive water system includes high pressure pumps, valves, pipes, hydraulic control units (HCU) and so on. The water charged at high pressure in HCU rush into S-FMCRD in case of scram.

- The hydraulic system including HCU is simplified by motor driven function of FMCRD
- Because scram water is brought into reactor pressure vessel (RPV), scram discharge system is eliminated and consequently occupational radiation exposure is reduced.
- One HCU can move two S-FMCRDs together in scram.



#### CRD hydraulic system diagram



#### HCU



##### Scram pilot valve

- Basic configuration is similar to the proven conventional HCU for the locking piston CRD.
- Enhanced reliability is achieved by the selected materials (Teflon for diaphragm, Rulon for seat).

##### Scram valve

- Basic mechanism and characteristic are similar to conventional HCU for the locking piston CRD.
- Two out-ports are used to simplify HCU.

##### Accumulator

- Basic configuration is similar to conventional HCU for the locking piston CRD.

## Sealless Type Sealless Type Sealless Type

### Electrical system

Induction motor for normal operation and digital technology for control equipment make the control system highly reliable and economical.

Ganged rod motion, 26 S-FMCRDs at maximum, is provided. Optical multiplexing network and digital measurement/control technology provide reduction of the number of cables, and provide improved automatic operation and enhanced operation support.

