

# JRC CANDU Sealing System (JCSS)

## Seal:

- ▶ Ultrasonic bolt seal designed to comply with CANDU requirements
- ▶ Patented by JRC
- ▶ Stainless steel bolt particularly resistant to harsh environment conditions
- ▶ Maintain identity while broken



## Analysis software:

- ▶ Read identity signature and integrity status
- ▶ Manage signature database
- ▶ Upgraded for each particular application



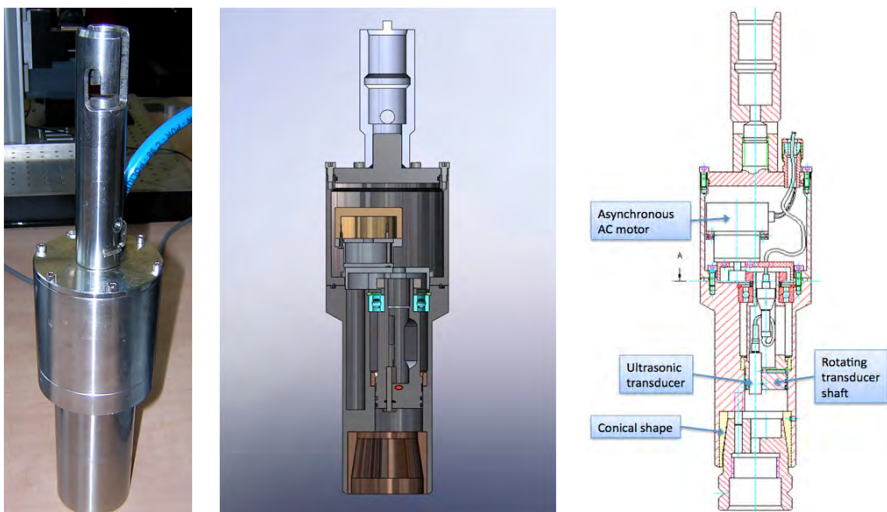
## Handling Tools:

- ▶ Used to remotely handle the seals and the reading head underwater



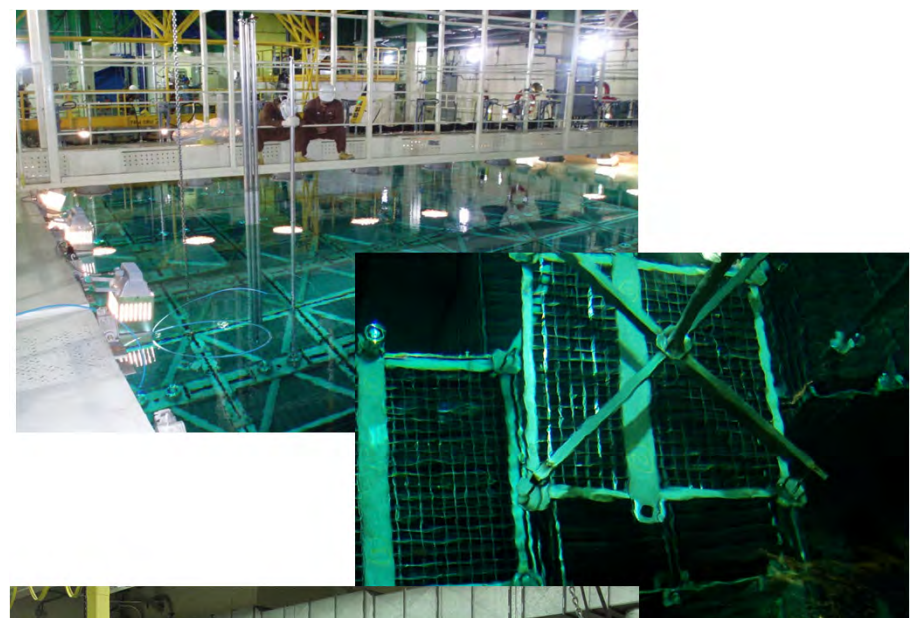
## Reading Head:

- ▶ Actuation of the ultrasonic transducer
- ▶ Low tech motor radiation resistant
- ▶ Conical shape to align seal with axis of rotation of transducer
- ▶ Stainless steel
- ▶ Waterproof



## Implementation:

- ▶ More than 600 JCR CANDU Seals were delivered to the IAEA and DG ENER (EURATOM Safeguards)
- ▶ Seals are used in Romania, Cernavoda, by DG ENER and by the IAEA in Pakistan, Karachi Nuclear Power Plant (KANUPP) and in Canada, Darlington



## Acquisition system:

- ▶ Off the shelf USB ultrasonic box
- ▶ Assembled in a box with motor control
- ▶ Industrial Toughbook

