Baffle-Former Bolt Issues in Nuclear Power Reactors

Bureau of Safety and Environmental Enforcement

Critical Offshore Connector Safety Forum
August 29, 2016

Jack McHale
Chief, Vessels and Internals Integrity Branch
NRC Office of Nuclear Reactor Regulation

Protecting People and the Environment
Function of baffle-former assembly is to direct coolant flow through the core. It also provides lateral support to the core during a seismic event or loss-of-coolant accident.
Stainless steel bolts are 5/8” dia. x ~2” long and attach the baffle plates to the former plates to form the baffle assembly.
Reactor Internals Arrangement

- Former plate
- Baffle plate
- Core baffle
- Former bolts
- Fuel assembly
Visual Indications of Failures

Missing Bolt Head

Protruding Bolt Head
Observed Bolt Cracking

Irradiation Assisted Stress Corrosion Cracking (IASCC)