IAEA Workshop on Safety Reassessments of Research Reactors in Light of the Feedback from the Fukushima Daiichi Accident, J7-TR-54780

ICC, Sydney, Australia, 3-7 December 2017

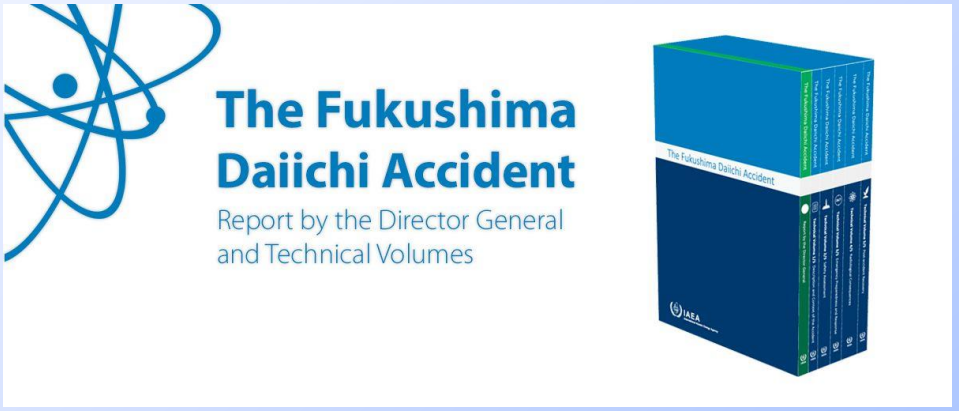
LESSONS FROM THE FD ACCIDENT

Assessment of Natural Hazards:
- **Sufficiently conservative**
- **In combination**

Periodic Re-Evaluation of Safety – advances in knowledge

Reliable Confinement

Operating Experience



Defence in Depth

Robust Cooling

Instrumentation and Control

Accident Management Loss of electrical power

Safety Culture

Regulatory Effectiveness

Training, Exercises, & Drills

IAEA, "The Fukushima Daiichi Accident", Report by the Director General, GC (59)/14, IAEA, Vienna, 2015

Safety Reassessments for Research Rea

- The lessons learned from the Fukushima accident are crucia implementing measures to prevent the occurrence of acci large release of radioactive material at nuclear installation research reactor.

Participants Reported on

Safety Reassessments of existing and new RRs	Regulatory effectiveness - improved regulatory framework
Total loss of electrical power supply – Portable Diesel Gen Sets, UPS, Batteries, Cables	Periodic Safety Reviews – Deterministic and Prob INSARR
Loss of ultimate heat sink – mobile pumps, hoses, sump return, sprinklers, external connections,	Defence in Depth Categorization of SCCs DEC - Accident management – Control Room
Site specific hazard assessment - Seismic Upgrades, Hardened Cores, Flood Protection, Tornado	Implementation Plans and Schedules – Still Ongoing: Safety culture?
Graded approach applied to safety reassessments, based on risk and hazards	Updating of Safety Documents including SAR, Procedures, EPR

Emergency Preparedness

Existing emergency arrangements and procedures have been reviewed, particularly for an accident initiated by an extreme external event. What about events affecting several facilities simultaneously?

Most facilities reported that the existing arrangements were generally adequate, but many made enhancements such as:

- Improving communication systems, increasing response forces and increasing emphasis on training of responders;
- Installing additional fire protection equipment and relocation of equipment into seismically qualified buildings;
- Redesigning off-site access points and routes and upgrading roads within the facility site;
- Performing exercises of response, incorporating human factors training and increasing the frequency of emergency exercises that include offsite organizations.

…Thank you