



PAŃSTWOWA
AGENCJA ATOMISTYKI

Safety Reassessment of MARIA research reactor in Poland

Piotr Leśny Department of Nuclear Safety,
National Atomic Energy Agency (PAA)

Outline

1. Introduction
2. The MARIA research reactor
3. Activities performed by the regulator
4. Summary

Introduction



Introduction

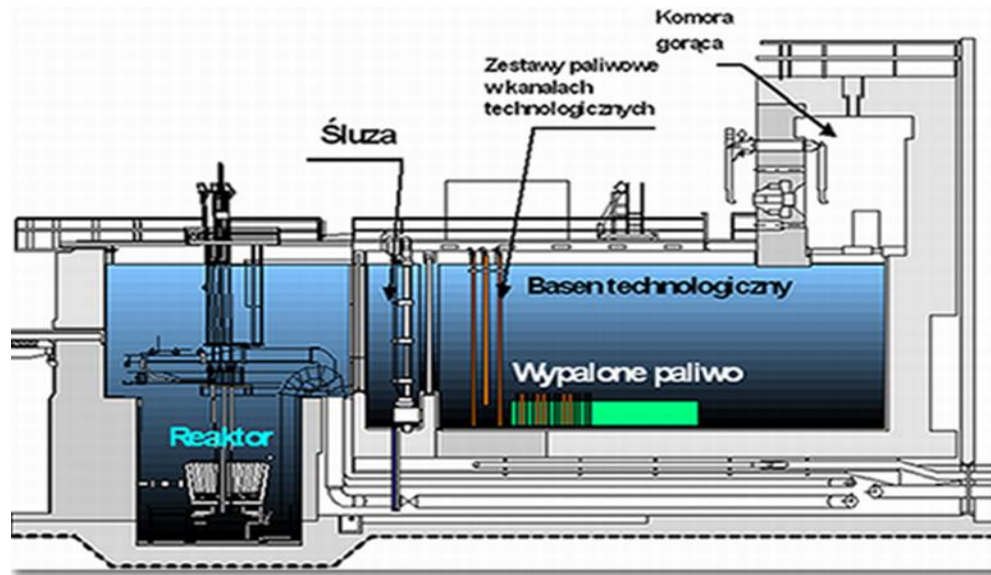
The President of the National Atomic Energy Agency (PAA) constitutes the central organ of the governmental administration, competent for nuclear safety and radiological protection. The scope of activities of the Agency's

President includes the tasks that involve ensuring national nuclear safety and radiological protection, in particular:

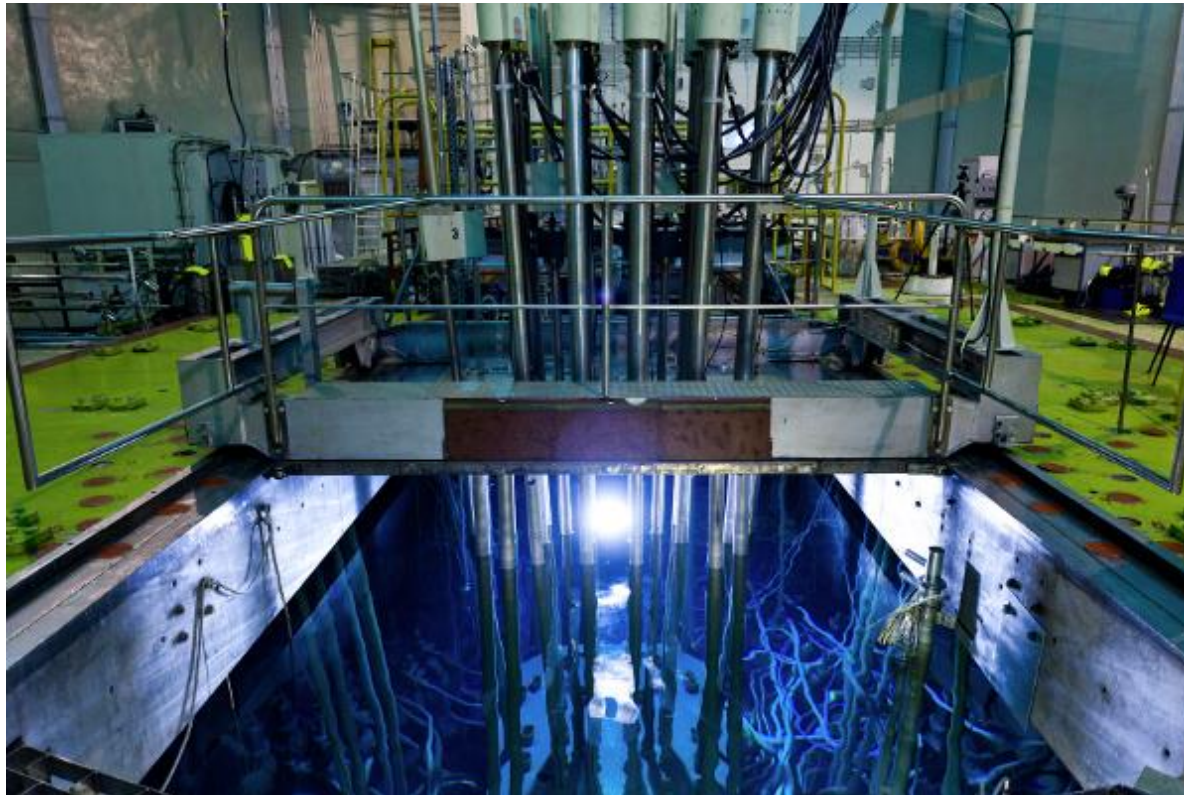
- a. issuing licenses and other decisions in issues related to the nuclear safety and radiological protection, according to the principles and methods established by the Act;
- b. conducting inspections in nuclear facilities and organizational units which possess nuclear materials, ionizing radiation sources, radioactive waste and spent nuclear fuel,
- c. performing the tasks involving the assessment of national radiation situation in normal conditions and in radiation emergency situations, and the transmission of relevant information to appropriate authorities and to the general public,
- d. developing the drafts of legal acts on the issues covered by this Act and conducting the process of establishing their final form, according to the procedures established in the working rules for the Council of Ministers.

The MARIA research reactor

The MARIA multipurpose research reactor is at present the only operating nuclear reactor in Poland. It is a high-neutron flux pool-type reactor, water cooled and water and beryllium moderated reactor, with design nominal thermal power of 30 MWt.



The MARIA research reactor



The reassessment of the MARIA reactor.

The reassessment of the MARIA reactor safety recommended by the IAEA in the SRS-80 report after the Fukushima accident was included in the updated MARIA Safety Analysis Report (ERBM2015) which was carefully assessed by PAA.



Activities performed by the regulator

The PAA has verified the reassessment of the safety of the MARIA reactor recommended by the IAEA in the SRS-80 report. Documentation has been reviewed (ERBM2015 ,The MARIA Reactor Emergency Plan and The NCBJ Emergency Response Plan, procedures, instructions et cetera). A SRS-80 compliance assessment report was prepared and recommendations for follow-up were made.

List of postulated initiating events (review).

(1) Loss of electrical power supplies:	
1. Loss of normal electrical power.	A
(2) Insertion of excess reactivity:	
1. Criticality during fuel handling (due to an error in fuel insertion);	B
2. Startup accident;	A
3. Control rod failure or control rod follower failure;	A
4. Control drive failure or system failure;	A
5. Failure of other reactivity control devices (such as a moderator or reflector);	B

Summary

The reassessment of the MARIA reactor safety recommended by the IAEA in the SRS-80 report after the Fukushima accident- process is in progress. New requirements, modernizations and organizational changes in the reactor is still facing new challenges both to regulator and operator.

Thank you very much !

