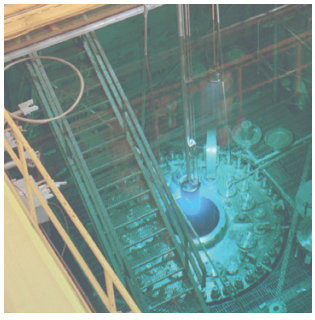
OMARR

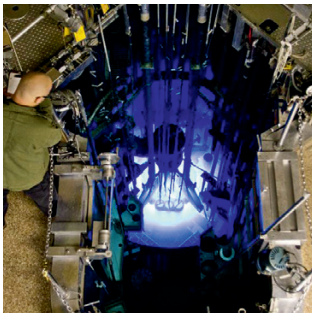
Operation and Maintenance Assessment for Research Reactors

Improve operational performance of research reactors by sharing good practices

Improve maintenance and ageing management programmes for long-term operation of research reactors

Establish and improve management system at research reactors





IAEA

60 Years

Atoms for Peace and Development

OBJECTIVES OF OMARR

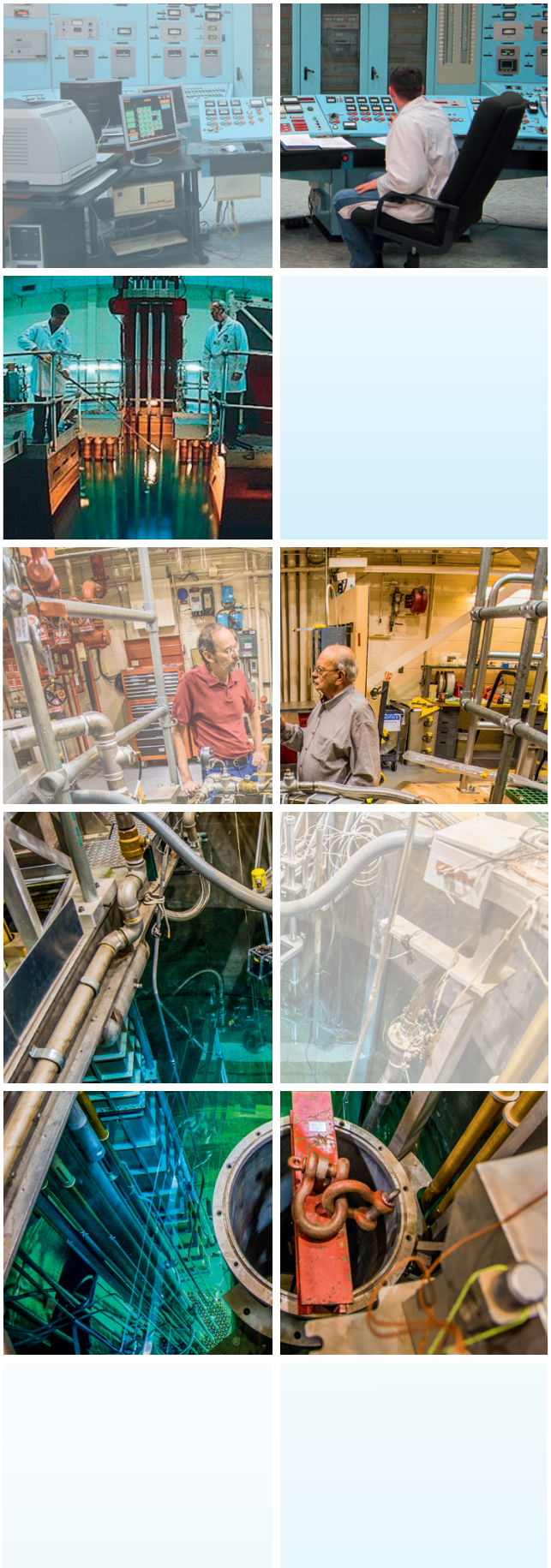
The Operation and Maintenance Assessment for Research Reactors (OMARR) mission provides advice and assistance to Member States in enhancing the performance of research reactors. The mission is aimed at improving operation and maintenance (O&M) practices throughout the facility's operational life cycle. The expected results include a more efficient long-term operation, better performance, improved safety and safety culture, and optimized utilization of human and financial resources.

The main objective of an OMARR mission is to conduct an O&M review of a research reactor facility. It identifies areas for improvement, addresses specific operational challenges, and creates a space for sharing experiences and good practices. Recommendations of an OMARR mission can also be used to prepare strategic plans for ageing management, refurbishment and modernization of a facility. Identified improvements, lessons learned and good practices at a given facility may be shared with other operational organizations with the consent of the facility. An OMARR mission promotes exchange of knowledge and experience between international experts and facility personnel, as well as development of self-assessment capabilities and continuous improvement of a research reactor facility.

SCOPE

An OMARR mission is performance oriented and focuses on good practices in O&M management. It can contribute to improving reliability for research reactors' long-term operation and use, regardless of their design, power level and age. The mission provides recommendations and suggestions in the areas that include but are not limited to:

- Operational plans, procedures and practices, including operational performance indicators;
- Maintenance plans, procedures and practices, including non-destructive examination and in-service inspections;
- Ageing management plans and practices;
- Human resources development, including for technical services;
- Quality assurance and integrated management system;
- Plant asset and configuration management;
- Plant modification and/or refurbishment.



APPROACH

Pre-OMARR
A preparatory Mission
Duration: 2–3 days

A facility conducts self-assessment and requests an OMARR Mission through official channels.

Request for OMARR Mission
- Self-assessment by facility
- Facility documents

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Pre-OMARR
- 1 IAEA staff
- 2 international experts
- Facility staff

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Discussion
- Current status review
- Future plans review
- Identify areas needing attention

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Scope of OMARR identified

4–12 months

The Pre-OMARR Mission is generally conducted 4 to 12 months before the main Mission, by a team comprised of one IAEA staff member, up to two international experts with relevant O&M experience and required facility staff.

The purpose is to identify the scope and methodology of the main OMARR Mission with the operating organization.

OMARR
The main Mission
Duration: 5–7 days

The main OMARR Mission is generally conducted by a team of two IAEA staff members, up to four international experts with relevant experience and required facility staff. The size of the team and the duration of the main Mission depend on the complexity of the facility and topics to be reviewed. Observers from organizations receiving a future OMARR Mission may be invited to participate with the consent of the hosting organization (and country).

OMARR
- 2 IAEA staff
- 3-4 international experts
- Facility staff

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Assessments and evaluations at RR
- Assessment of current status of O&M
- Identification of opportunity for improvement
- Development of Action Plan

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◇ → **Implementation initiated**

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Report
- Assessment results, including identified good practices and opportunities for improvement
- Recommendations
- Suggestions

Post-OMARR
A follow-up Mission
Duration: 3–5 days

The follow-up OMARR Mission is undertaken if requested by the facility. It is generally conducted by a team of one IAEA staff member, one or two experts with relevant experience and required facility staff.

The Mission focuses on the review and implementation of the main OMARR Mission recommendations and suggestions.

Request for post-OMARR Mission
- 1 IAEA staff
- 1-2 international experts
- Facility staff

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Joint review
- Need for mid-course correction

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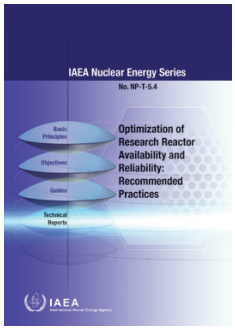
Report
- Implementation assessment
- Modified Action Plan



The OMARR Mission addresses the topical areas described in IAEA Nuclear Energy Series No. NP-T-5.4

Optimization of Research Reactor Availability and Reliability: Recommended Practices

BENEFICIARIES

The Mission is available, upon request, to all Member States with research reactors under commissioning or in operation. OMARR Mission can also assist an operating organization carrying out a major refurbishment or modernization of their facilities in identifying the structures, systems and components to be replaced.

It is also useful after a major refurbishment or modernization of a research reactor facility in identifying ways to improve O&M programmes and procedures.

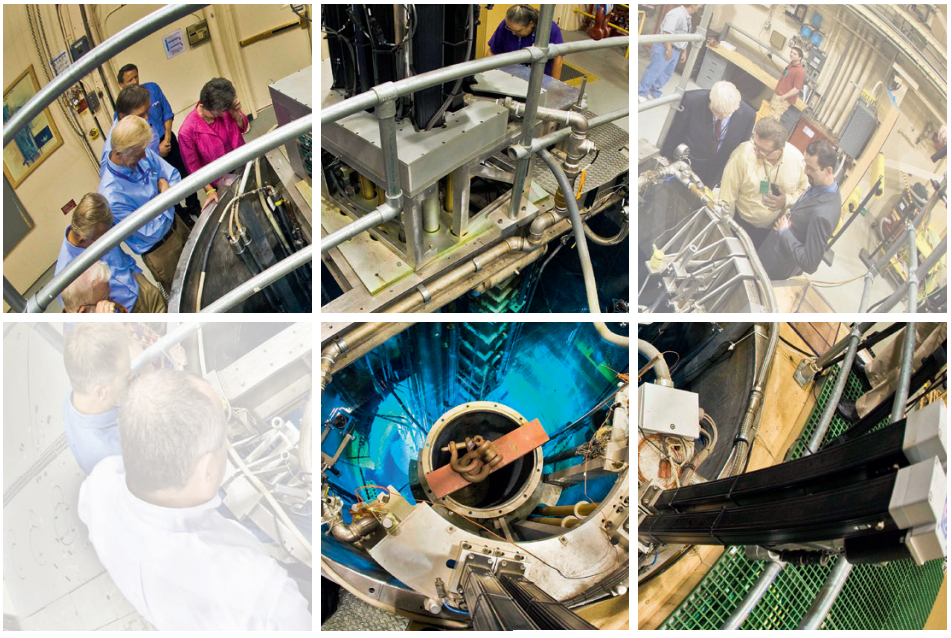
OMARR missions were initiated in 2012. The IAEA has completed two pilot OMARR missions: at the 20 MW RR at the National Institute of Standards and Technology (NIST), in the United States of America, and at the 250 kW RR at the Applied Nuclear Energy Laboratory (LENA) at the University of Pavia, in Italy.

OUTPUTS

The IAEA provides an OMARR mission report to the research reactor operating organization. The operating organization can share the report with other stakeholders.

OMARR report includes:

- **Recommendations:** advice on how to resolve identified issues, addressing root causes rather than the effects of the issues. Recommendations are generally based on proven methods for achieving excellence.
- **Suggestions:** additional proposals that may indirectly contribute to improvements in operational performance, effectiveness and safety.
- **Good practices:** performance, activity or use of equipment, which the team considers to be markedly superior to that observed elsewhere, and fit for emulation by other facilities.



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