

APPENDIX 2: Future plan (non-NAA group)

China *(same as the summary of country report)*

In order to meet the needs of medical isotopes, the government issued the "Medium and long-term Development Plan for Medical isotopes (2021-2035)", the research reactor has formulated the isotope production and development plan, and the aging problem of China's research reactors has become increasingly serious. During the PSR and OLE, the research and development of aging management methods and appropriate AMPs have been studied and developed suitable for research reactor and experience feedback has been provided.

Indonesia

The main on going program for Multi Purpose Reactor G.A. Siwabessy (RSG GAS) is overall revitalization with the main purpose for radioisotopes production for radiopharmaceuticals (RIRP). The revitalization program is including design and revitalization of RIRP process facilities, scale-up production of ^{131}I and $^{99}\text{Mo}/^{99\text{m}}\text{Tc}$, and research development of ^{177}Lu , ^{153}Sm , ^{46}Sc , ^{32}P , ^{198}Au , ^{166}Ho , advancing of potential neutron beam facilities, and development of a new beam line instrument. As the first stage, the program has been designed for two years for the revitalization of the RSG including the decontamination and revitalization of the building for post irradiation processing of RIRP.

Japan

It continues to work on research and development of radioisotopes production (e.g. ^{99}Mo and so on) and radiochemical process with Action plan. From now on, it has been to researched and developed RI production with human resource development. In addition, it has approached to enhance supply chain of RI production and research reactor.

Kazakhstan

Analysis of this year's presentations showed that FNCA member countries not only have radioisotope production capabilities, but are also interested in areas such as nuclear reactor aging management, new nuclear reactor design development, and nuclear science and technology. I propose that the next seminar be devoted to research and work aimed at developing nuclear science and technology such as neutron beam and neutron instruments in research reactor for FNCA member countries.

Malaysia

Malaysia emphasizes ongoing projects and future directions, including the development of new reactor codes, advanced experimental test rigs, and preliminary studies for new radioisotopes like ^{166}Ho and others related. These initiatives aim to expand the reactor's capabilities and support the growing demand for advanced research reactor applications. Looking ahead, there is a pressing need to develop a new research reactor to meet future requirements, strengthen Malaysia's leadership in nuclear technology, and drive scientific and technological progress in the region

Mongolia

1. The Research Reactor (RR) project for Mongolia had been discussed internally for several years. Design study and fuel comparison analyzes were conducted. Sharing experiences and expertise in the FNCA member countries for designing and simulating the RR core, its component and additional instruments is beneficial to member countries.

2. Capacity of qualified medical physicists is improved to overcome the lack of recognition of medical physics as a distinct profession. HRD in medical physics, especially applications of RIs produced in RR is important. Thus, sharing experiences of HRD in this field is important.

Philippines

The upgrade to an accelerator-driven subcritical assembly, funded by the IAEA and local projects, began in January 2024 and is set for completion by 2026. Meanwhile, construction for the Center for Nuclear Medicine Research and Development is ongoing, with the cyclotron facility expected by 2026 and full operation targeted before 2030.

Thailand *(same as the summary of country report)*

Radioisotope production produced in TRR-1/M1 has significant changes in many aspects regarding the situation with fuel supply and ageing of a research reactor. TRR-1/M1 has a problem with ageing and physical degradation. Human resource development, capacity building and collaboration with other countries are considered a remarkable influence for new radioisotopes production. The collaborative research of nuclear medicine researchers, and processing laboratories can strengthen the sustainable and establishing new and challenging technologies for radioisotope production.

Vietnam *(same as the summary of country report)*

Da Lat nuclear reactor with a nominal capacity of 500 kW is the only reactor in Vietnam. Officially operated and exploited from March 1984 to present. As of the end of August 2024, the reactor has operated for a total of about 61,200 hours, averaging 1,500 hours of safe and efficient operation per year. More than 90% of the reactor's operating time has been exploited for radioisotope research and production. During its operation, the reactor has been successfully used in the research and production of a variety of radioisotopes and radiopharmaceuticals used in medicine. The Da Lat nuclear reactor provided about 14,300 Ci radioisotopes used in medicine, most of which are ^{131}I , ^{32}P , $^{99\text{m}}\text{Tc}$ generator and KIT in vivo, contributing to the development of nuclear medicine in Vietnam.