

# NUCLEAR MALAYSIA



MALAYSIAN NUCLEAR AGENCY

*'Nuclear Technology  
Propels The National  
Vision'*



NUKLEAR  
MALAYSIA



## THE HISTORY

Malaysian Nuclear Agency (Nuclear Malaysia) has a role to introduce and promote the application of nuclear science and technology for national development.

Established on 19 September 1972, Nuclear Malaysia was then known as Centre for Application of Nuclear Energy (CRANE) before it was formally named as Tun Ismail Atomic Research Centre (PUSPATI).

In June 1983, PUSPATI was placed under the patronage of Prime Minister Department and was called Nuclear Energy Unit (UTN). It was then placed under the Ministry of Science, Technology and Environment in October 1990. In August 1994, its name was changed to Malaysian Institute for Nuclear Technology Research (MINT).

On 28 September 2006, following its restructuring, MINT was given a new identity, which is Malaysian Nuclear Agency. Its strategic location, near higher learning institutions, colleges and national training institutions, besides its close proximity to the National Administration Centre, Putrajaya, and the Multimedia Super Corridor, Cyberjaya, has stimulated Nuclear Malaysia to meet its aspirations.

Since its establishment, Nuclear Malaysia maintains its significance as an outstanding organisation in science, technology and innovation.

Nuclear Malaysia plays a pivotal role in providing quality and best-in-class research towards comprehensively generating new technologies to meet the needs of nuclear technology's variety of applications. This standing is acquired through professional workforce training and discipline, well-planned infrastructure, and well-resourced research laboratories.

To achieve excellence in R&D and services in nuclear technology, Nuclear Malaysia provides a conducive research environment to produce substantial achievement, a feat to be proud of.

Nuclear Malaysia has been chosen as the coordinator for national nuclear power development through inter-agency cooperation, mainly to generate acceptance on nuclear power. At organisational level Nuclear Malaysia is consolidating its resources, especially on human capital development in different aspects of nuclear power planning, on safety and security, in preparation for eventuality of Malaysia embarking on a nuclear power programme.

## ROLES AND RESPONSIBILITIES







## VISION

Nuclear science and technology for knowledge generation, wealth creation, and societal and national well-being.

## MISSION

Excellence in research and applications of nuclear technology for sustainable development.

## OBJECTIVES

- To generate new products and technologies through research and innovation based on the national development agenda.
- To achieve an income, at minimum 30% of the annual operating budget, through transfer and commercialisation of technology.
- To enhance organisational excellence through planning and quality management.

## MINISTERIAL FUNCTION ACT P.U. (A) 170/2008)

- To conduct research and development (R&D), services and training in the field of nuclear technology for national development.
- To encourage application, transfer and commercialisation of nuclear technology.
- To coordinate and manage the national and international nuclear affairs, and act as the liaison agency with International Atomic Energy Agency (IAEA) and Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

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## MAIN FACILITIES

In an effort to boost implementation of its missions, Nuclear Malaysia provides several major nuclear facilities, for research and commercialisation purposes as follows :

Reaktor TRIGA PUSPATI  
SINAGAMA Irradiation Plant  
ALURTRON Irradiation Plant  
Radioactive Waste Treatment Plant  
RayMINTEX Plant  
Incineration Plant  
Secondary Standard Dosimetry Laboratory  
Radioisotope Production Laboratory  
Neutron Activation Analysis Laboratory  
Non-Destructive Testing Laboratory  
Non-Ionising Radiation Laboratory  
Polymer Laboratory  
Tissue Culture Laboratory  
Biomaterial Laboratory  
Flora Genetika Garden  
Gamma Greenhouse





Nuclear Malaysia conducts extensive R&D in the national socio-economic sectors such as industry, medical, agriculture, manufacturing and the environment.

## Industrial technology

- ✦ Development and characterisation of materials
- ✦ R&D of NDT methods
- ✦ Tracer technology application in environmental and industrial management
- ✦ System development for processing plant troubleshooting
- ✦ Environment, food and biological sample analytical facilities

## Medical technology

- ✦ Development of radiopharmaceutical kits
- ✦ Development of monoclonal antibodies
- ✦ Development of medical tablets packaging technology
- ✦ Imaging technology
- ✦ Development of artificial bone graft product manufacturing technology

## Manufacturing

- ✦ Gamma and electron irradiation on natural products such as chitin, chitosan, natural rubber and polysaccharides
- ✦ Development of heat shrinkable tubes
- ✦ Rubber wood, palm and kenaf fibre polymer composite
- ✦ Pressure-sensitive adhesive and ink cartridge
- ✦ Resin synthesis and modification from palm oil
- ✦ Industrial, flue gas and waste water treatment
- ✦ Cross-linking and biodegradable film

## Agriculture and Biotech

- ✦ Mutagenesis and plant biotechnology
- ✦ Development of DNA marker, application of flow cytometry and molecular biology in the production of new varieties of ornamental plants, food and industrial crops
- ✦ Production of enzymes
- ✦ Production of hydrogel and other biomaterials
- ✦ Development of bioproducts, e.g. animal feed, biofertilizers, bioactive compounds from natural resources
- ✦ Modernisation of gaharu industry

## Environment

- ✦ Marine and air pollution
- ✦ Hydrology and flow of polluted items
- ✦ Soil erosion and deposition
- ✦ Sediment movement in river estuary and coastal shore
- ✦ Development of incineration technology





## PRODUCTS AND SERVICES

Based on a multitude of technological research and development implemented to accommodate the requirements of various economic sectors, Nuclear Malaysia also extends numerous products and services with prospects of technology transfer and commercialisation.

### Products

- ✦ Radiation vulcanised rubber latex
- ✦ Medical diagnostic kits
- ✦ Medical radioisotopes
- ✦ Industrial radioisotopes
- ✦ Agricultural radioisotopes
- ✦ New varieties of ornamental, fruit and food crops
- ✦ Biomaterials

### Services

- ✦ Environmental research and assessment
- ✦ Environmental monitoring
- ✦ Radiological impact assessment
- ✦ Water resources management
- ✦ Agricultural, industrial and domestic waste management

### Quality Assurance

- ✦ Personnel dosimetry
- ✦ Medical quality assurance
- ✦ Industrial quality assurance

### Non-chemical Sterilisation

- ✦ Gamma irradiation
- ✦ Electron beam irradiation

### Technical and Engineering Services

- ✦ Material, structure and industrial plant inspection and testing
- ✦ Industrial inspection and process control
- ✦ Agricultural technology
- ✦ Medical technology
- ✦ Material analysis and evaluation

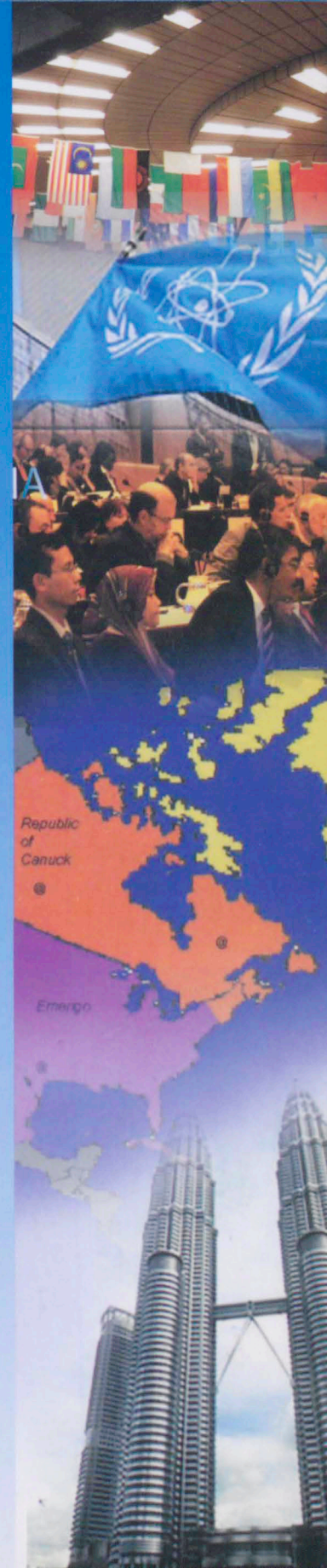
### Training

- ✦ Inspection and testing technology
- ✦ Environment and health safety
- ✦ Instrumentation and engineering
- ✦ Technology management
- ✦ Medical X-ray

## GLOBAL ARENA

Several remarkable roles and achievement attained by Nuclear Malaysia locally and internationally include the following :

- ✦ Malaysian Nuclear Agency provides technical support to the Ministry of Foreign Affairs and Ministry of Science, Technology and Innovation in establishing relationship with international community especially in handling multilateral nuclear issues.
- ✦ Responsibility of representing the country in discussions pertaining to multilateral nuclear issues.
- ✦ Malaysian Nuclear Agency has established bilateral relation with International Atomic Energy Agency (IAEA), which has its headquarters in Vienna, Austria.
- ✦ Malaysian Nuclear Agency is selected to be the coordinator for several projects in the regional Co-operative Agreement (RCA) and Forum for Nuclear Cooperation in Asia (FNCA).
- ✦ To enable the public a clear view of the nuclear research reactor and other facilities available in this agency through visits and exhibitions.
- ✦ To handle issues of social importance especially on radiation protection.
- ✦ First government agency accredited with ISO 9000, in 1991.
- ✦ 10 processes accredited with ISO 9001.
- ✦ 2 laboratories accredited with ISO 17025 (Testing and Calibration laboratories).
- ✦ In the process of accreditation with OHSAS 18001/IMS.





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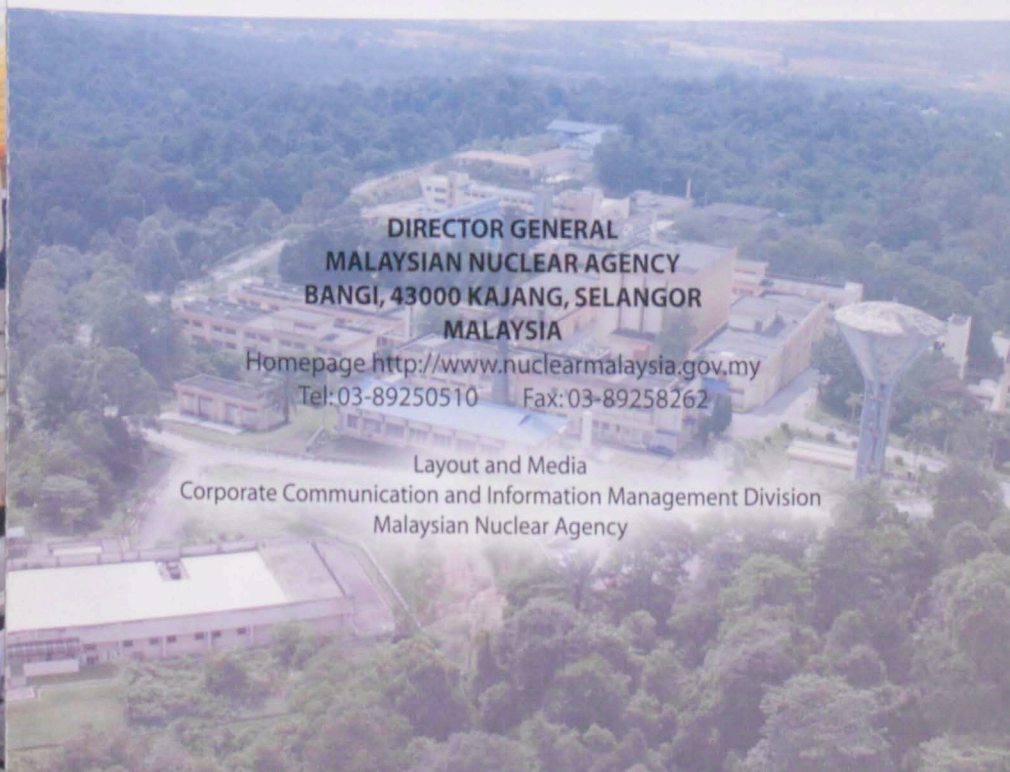
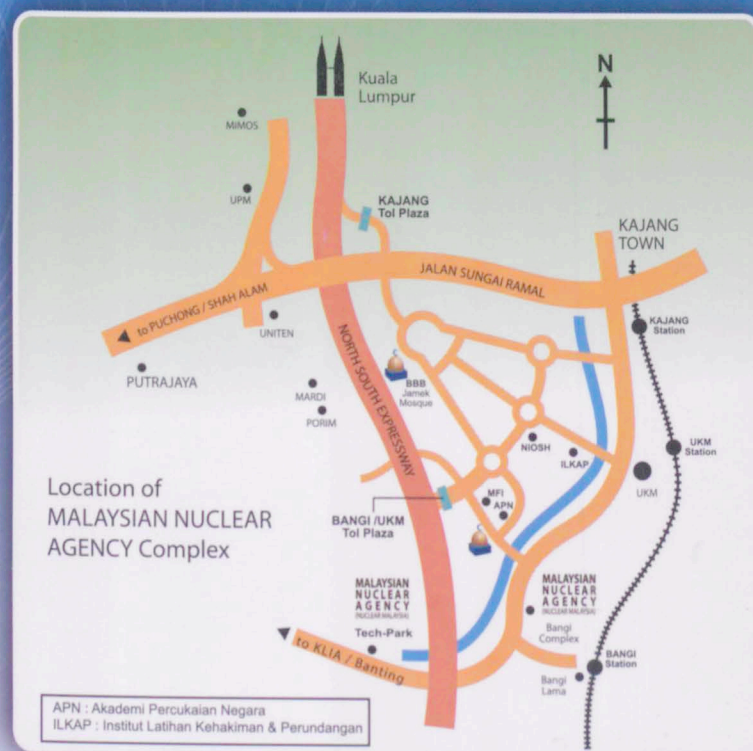
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## LOCATION MAP





# NUCLEAR MALAYSIA

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[www.nuclearmalaysia.gov.my](http://www.nuclearmalaysia.gov.my)