

Nuclear fuel cycle

Reference: 087



OBJECTIVES

From the extraction of the uranium ore to the reprocessing of spent fuel, as well as on the management of waste produced during the different stages of the fuel cycle, the trainees will be able to integrate and reconstitute at different degrees of implementation comprehensive information and in-depth knowledge on the industrial operations related to the nuclear fuel cycle in France.

PUBLIC

Technicians, scientists and engineers working in nuclear sciences and industry and wishing to have advanced knowledge in the field of nuclear fuel cycle.

CONTENT

- The nuclear fuel cycle: an overview.
- Geology of uranium: exploration, mining and resources.
- From uranium ore to yellow cake: the concentration stage.
- From uranium ore concentrates to uranium hexafluoride UF_6 .
- Uranium enrichment: overview.
- Boiler/Fuel: the constraints.
- Fuel assembly: general design.

- Recycling industry: Mixed oxide fuel (Mox).
- Fuel rod and assembly: thermal-mechanical design.
- Fuel services.
- Uranium enrichment by gaseous diffusion and ultracentrifugation processes.
- Options for spent fuel management.
- French experience with interim storage technologies.
- Transport of nuclear fuel cycle materials.
- Fuel cycle front-end: technical and economical aspects.
- Reprocessed uranium recycling.
- Reprocessing operations and technology.
- Inventory of fuel cycle wastes and long term waste management.
- R&D in the field of the long-lived nuclear waste management: advanced separation, transmutation and long-term interim storage.

METHOD

Conferences. Technical visits (subject to acceptance):

- Uranium fuel fabrication plant (FBFC).
- Uranium refining and conversion plant (Comurhex).
- Uranium enrichment plant (Eurodif).
- Mox fuel fabrication plant (Melox).
- Na-FNR (Phenix).
- La Hague spent fuel reprocessing plant (Areva NC).
- Storage site for low radioactivity waste (Andra).

Maximum number of trainees: 18.

This course includes visits of facilities with regulated zones. Please comply with the conditions stated in the terms of sale.

PUBLIC PRICE - 2016

7850 €

DURATION - 2016

10 days (66 hours)

LOCATION AND DATE - 2016

Saclay

- 26-30 September 2016 + 3-7 October 2016

COORDINATION - 2016

Education official(s) :

Saclay

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CONTACT - 2016

Training manager(s) :

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• 25-29 September 2017 + 2-6 October 2017

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