

Nature and scope of the project

ARCADIA will assess the regional capabilities of the New Member States to effectively contribute to bring closer European research on the ESNII and NUGENIA objectives, namely demonstration of the LFR technology and improvement of Generation III reactor safety, with a major focus on assessment of construction of ALFRED in Romania.

As for any new nuclear project, the construction of ALFRED in Romania raises a large range of questions that must be considered before taking the final decisions. These questions regard not only the technical-scientific point of view, but also financial and socio-economic aspects, public acceptability, licensing, siting and national support. Apart from these typical issues, entrusting an international consortium with the management of a real, industrial project poses a

number of brand new questions that have to be approached for the very first-time: these include mainly the project management itself, legal aspects, knowledge management and intellectual property, regional cooperation. Since all these aspects have to be carefully reconsidered in the light of the special nature of ALFRED (a demonstrator of an innovative technology), and should be not considered individually but in a close interaction, ARCADIA was designed as the most effective frame to approach this challenge in a FP7 Coordinated Action project. The consortium is grouping the most important European partners owning the necessary competence to target the above mentioned matters.



Participants of Kick-off meeting in Bucharest, Romania, 13-15 November 2013

Activities

The activities planned inside the project are directly linked to the main challenges of ALFRED construction in Romania. It is a *new technology* that still needs R&D&I, therefore, the existing expertise and infrastructure available at regional level will be screened, and methods to close the gaps will be identified.

ALFRED is a *nuclear facility*, first of this type, and needs to be licensed and achieve public acceptance. ARCADIA will clarify the steps for siting and construction according to

the European and national requirements identifying the steps required to set up both the licensing and siting processes.

It is an *expensive investment*, therefore, activities are dedicated to identify the optimal structure to draft a *successful feasibility study* for ALFRED construction in Romania and find appropriate and accessible funding schemes.

It is a *multi-national project* requesting national support and also a new type of legal entity to lead ALFRED project to its construction. To reach these goals a multi-disciplinary working group will be created and will proceed in the preparation of the appropriate documentation supporting the inclusion of the ALFRED in the national strategies, and in the definition of the most appropriate Legal entity structure.

Existing research reactors capabilities will be inventoried to assess their actual contribution to Gen III safety improvement and LFR technology demonstration.

News on ALFRED implementation

The FALCON (Fostering ALfred CONstruction) Consortium Agreement was signed on December 18th 2013 in Bucharest, at a ceremony in the presence of Romanian Energy Minister Constantin Nita, by the legal representatives of

the Consortium members: Ansaldo Nucleare (Roberto Adinolfi), ENEA (Giovanni Lelli) and Nuclear Research Institute "ICN" (Constantin Paunoiu).

This represents an important step towards the construction of a demonstrator for the Generation IV lead-cooled nuclear fast reactor in Romania. The reference site considered by the Romanian Authorities is Mioveni, near Pitesti, in South-Muntenia region of Romania.



Context

ALFRED (Advanced Lead Fast Reactor Demonstrator) is intended to be built in Romania by a consortium of nuclear research organisations and industry from MS interested to develop and exploit this technology. Construction of ALFRED in Romania raises a large range of questions that must be considered before taking final decisions. The projects takes, where appropriate, benefits from Gen III developments and carefully looks to its safety improvement.

Relevant events

ARCADIA kick-off meeting
13-15 November 2013, Bucharest, Romania

The European Forum to discuss Nuclear Technology Issues, Opportunities & Challenges
11-14 May 2014, Marseille, France

<http://www.euronuclear.org/events/enc/enc2014/index.htm>

Annual International Conference on Sustainable Development through Nuclear Research and Education (Nuclear 2014)
28-30 May 2014, Pitesti, Romania

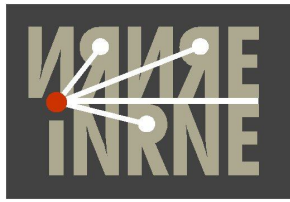
http://www.nuclear.ro/ro/conferinta/nuclear_2014.php#

22nd International Conference on Nuclear Engineering (ICONE-22)
7-11 July 2014, Prague, Czech Republic.

<http://www.asmeconferences.org/icone22>

ARCADIA workshop for Networking with EU Projects
15-16 October 2014, Řež (Prague), Czech Republic.

Full list of participants on page 2



Institute for Nuclear Research
and Nuclear Energy
Bulgarian Academy of Science



Studiecentrum voor Kernenergie
- Centre d'Etude de l'énergie
Nucléaire



Technical University of Sofia -
Research and Development
Sector



Ente per le nuove Tecnologie
l'Energia e l'Ambiente e lo
Sviluppo Economico Sostenibile



Regia Autonoma Tehnologii
pentru Energia Nucleara



TARTU Ülikool



Agencija Za Radioaktivne
Odpadke



Universitatea
Politehnica Bucuresti



Universitatea din
Pitesti



Budapesti Muszaki Es Gazdasagtudomanyi
Egyetem



National Center for Scientific
Research "Demokritos"



Centrum Vyzkumu REZ S.R.O.



NATIONAL CENTRE for
NUCLEAR RESEARCH
Świerk

Narodowe Centrum Badan Jadrowych



Institut De Radioprotection
et de Surete Nucléaire



Institut SYMLOG de France



Centrul de inginerie tehnologica
obiective nucleare



Centralne Laboratorium Ochrony Ra-
diologicznej

Univerza v Ljubljani



University of Ljubljana



Lithuanian Energy
Institute



Kungliga Tekniska
Hoegskolan



Instituto Superior
Tecnico



Agenzia per la Promozione
della Ricerca Europa



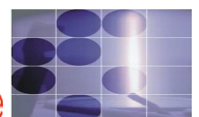
Institute of Nuclear
Chemistry and Technology



Regional Environmental Center
for Central and Eastern Europe



ANSALDO NUCLEARE
SPA



Jožef Stefan
Institute