

ONGOING SIGNED PROJECTS - CALL NFRP - 2016 - 2017 -1

Acronym / CORDIS link	Title	Teaser	Programme	Topic
ADVISE	ADVanced Inspection of Complex StructurEs	ADVISE aims to advance the ultrasonic inspection of complex structured materials, for which conventional ultrasonic techniques suffer from severe performance limitations due to the micro and/or macro-structure. The project relies on a multi-pronged strategy: - Model-assisted	H2020-Euratom-1.1.	NFRP-1
Beacon	Bentonite mechanical evolution	The overall objective of the project is to develop and test the tools necessary for the assessment of the hydro-mechanical evolution of an installed bentonite barrier and its resulting performance. This will be achieved by cooperation between design and engineering, science...	H2020-Euratom-1.2.	NFRP-6
CORTEX	Core monitoring techniques and experimental validation and demonstration	The CORTEX project aims at developing an innovative core monitoring technique that allows detecting anomalies in nuclear reactors, such as excessive vibrations of core internals, flow blockage, coolant inlet perturbations, etc. The technique will be based on primarily using...	H2020-Euratom-1.1.	NFRP-1
ESFR-SMART	European Sodium Fast Reactor Safety Measures Assessment and Research Tools	To improve the public acceptance of the future nuclear power in Europe we have to demonstrate that the new reactors have significantly higher safety level compared to traditional reactors. The ESFR-SMART project (European Sodium Fast Reactor Safety Measures Assessment and...	H2020-Euratom-1.1.	NFRP-2
CHANCE	Characterization of conditioned nuclear waste for its safe disposal in Europe	Successful interim storage and final disposal of radioactive waste (RW) requires effective characterization and quality control of the waste. CHANCE aims to address the as yet unsolved and specific issue of the characterization of conditioned radioactive waste (CRW). CHANCE...	H2020-Euratom-1.2.	NFRP-7

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<u>M4F</u>	MULTISCALE MODELLING FOR FUSION AND FISSION MATERIALS	The main goal of M4F project is to bring together the fusion and fission materials communities working on the prediction of microstructural-induced irradiation damage and deformation mechanisms of irradiated ferritic/martensitic (F/M) steels. M4F project is a multidisciplinary...	H2020-Euratom-1.6.	NFRP-13
<u>NOMAD</u>	Nondestructive Evaluation (NDE) System for the Inspection of Operation-Induced Material Degradation in Nuclear Power Plants	The long-term operation (LTO) of existing nuclear power plants (NPPs) has already been accepted in many countries as a strategic objective to ensure adequate supply of electricity over the coming decades. In order to estimate the remaining useful lifetime of NPP components...	H2020-Euratom-1.1.	NFRP-1
<u>TeaM Cables</u>	European Tools and Methodologies for an efficient ageing management of nuclear power plant Cables	The lifetime of existing NPPs can potentially be extended to between 60 and 80 years if safety and operability of facilities can be guaranteed. With an average of 25 000 cables for a total length of 1 500 km per nuclear power plant (NPP) unit, all organisations involved in the...	H2020-Euratom-1.1.	NFRP-1
<u>TRANSAT</u>	TRANSversal Actions for Tritium	"TRANSAT (TRANSversal Actions for Tritium) is a 4-year multidisciplinary project built to contribute to Research and Innovation on "cross-cutting activities" needed to "improve knowledge on tritium management in fission and fusion facilities". It proposes actions answering...	H2020-Euratom-1.1.	NFRP-14
<u>DISCO</u>	Modern spent fuel dissolution and chemistry in failed container conditions	While the scientific understanding of the dissolution of standard spent uranium oxide fuel has reached a certain mature state, new types of fuels with additives ("doped fuels") have been developed. These fuels are already in use in some reactors, and their use is foreseen...	H2020-Euratom-1.2.	NFRP-6
<u>INSPYRE</u>	Investigations Supporting MOX Fuel Licensing in ESNII Prototype Reactors	INSPYRE, a proposal fully supported and endorsed by the Steering Committee of the EERA Joint Programme on Nuclear Materials, focusses on the investigation of fast reactor MOX fuel to support the licensing of the start-up cores of the ESNII reactor prototypes. It will: • Use...	H2020-Euratom-1.2.	NFRP-5

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<u>ATLASplus</u>	Advanced Structural Integrity Assessment Tools for Safe Long Term Operation	NFRP 1: 2016-2017 notes that "A number of current Generation II reactors should continue operating for a few decades and Generation III should still be in operation one century from now." This requires a systematic ageing management procedure for justifying their safe long...	H2020-Euratom-1.1.	NFRP-1
<u>FOREVER</u>	Fuel FOR RESEARCH Reactors	Securing the nuclear fuel supply for European research reactors is the overall objective of the FOREVER project. Our analysis points out two main risks of shortage: (i) the very challenging conversion of High Performance Research Reactors (HPRRs) from High to Low Enriched...	H2020-Euratom-1.8.	NFRP-11
<u>THERAMIN</u>	Thermal treatment for radioactive waste minimisation and hazard reduction	Safe management of radioactive waste is challenging to waste producers and waste management organisations. Deployment of thermal treatment in an optimised waste management lifecycle can provide significant volume reduction, waste passivation and organics destruction, with...	H2020-Euratom-1.2.	NFRP-7
<u>NARSIS</u>	New Approach to Reactor Safety Improvements	Probabilistic Safety Assessment (PSA) procedures allow to better understand and estimate the likelihood of the most causes prone to initiate nuclear accidents and to identify the most critical elements of the systems. However, despite of the remarkable reliability of current...	H2020-Euratom-1.1.	NFRP-1
<u>INSIDER</u>	Improved Nuclear Site characterization for waste minimization in DD operations under constrained Environment	Decommissioning and dismantling (D&D) operations are strongly dependent on the facilities history and the inventory of present radionuclides. The D&D processes are significant source of radioactive waste and their management is a major challenge from technical, economical...	H2020-Euratom-1.2.	NFRP-7
<u>GEMMA</u>	Generation iv Materials Maturity	GEMMA Project addresses the action NFRP 5 of the 2015 EU call: "Materials research for Generation-IV reactors", which has the scope to investigate the areas where further research and innovation is needed to reach technological maturity in the frame of the development of...	H2020-Euratom-1.2.	NFRP-5

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<u>GENIORS</u>	GEN IV Integrated Oxide fuels recycling strategies	The current open nuclear fuel cycle uses only a few percent of the energy contained in uranium. This efficiency can be greatly improved through the recycling of spent fuel (as done today in France for instance), including, in the longer term, multi-recycling strategies to be...	H2020-Euratom-1.1.	NFRP-3
<u>MEACTOS</u>	Mitigating Environmentally Assisted Cracking Through Optimisation of Surface Condition	Environmentally-Assisted cracking (EAC) is one of the major failure modes occurring in light water reactors (LWRs). The condition of surfaces exposed to the primary coolant plays a main role on the susceptibility of components to EAC. However, many national and international...	H2020-Euratom-1.1.	NFRP-1

Notes:

Programme

H2020-Euratom-1.1. - Support safe operation of nuclear systems

H2020-Euratom-1.2. - Contribute to the development of solutions for the management of ultimate nuclear waste

H2020-Euratom-1.6. - Lay the foundations for future fusion power plants by developing materials, technologies and conceptual design

H2020-Euratom-1.8. - Ensure availability and use of research infrastructures of pan_european relevance

Topic

NFRP-1 - Continually improving safety and reliability of Generation II and III reactors

NFRP-2 - Research on safety of fast neutron Generation-IV reactors

NFRP-3 - Investigating the safety of closed nuclear fuel cycle options and fuel developments

NFRP-5 - Materials research for Generation-IV reactors

NFRP-6 - Addressing key priority R&I issues for the first-of-the-kind geological repositories

NFRP-7 - Research and innovation on the overall management of radioactive waste other than geological disposal

NFRP-11 - Support for the EU security of supply of nuclear fuel for research reactors

NFRP-13 - Fission/fusion cross-cutting research in the area of multi-scale materials modelling

NFRP-14 - Cross-cutting support to improved knowledge on tritium management in fission and fusion facilities