



OFFERR
EUROPEAN USER FACILITY NETWORK

D1.1 Definition of the content and format for the Infrastructure Factsheet

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Author : Enrique Gonzalez (CIEMAT)



Other contributors

COMPANY	WP1 CONTACT POINTS
EDF	charles.toulemonde@edf.fr
CEA	stephane.gaillot@cea.fr
CIEMAT	enrique.gonzalez@ciemat.es
ENEN	gabriel.pavel@enen.eu
IRSN	Emmanuel.rouge@irsn.fr francois.barre@irsn.fr
JRC	oliver.martin@ec.europa.eu
JSI	leon.cizelj@ijs.si
LGI	candice.boudet@lgi.earth gilles.queneherve@lgi.earth
KIT	beatrix.muehl@kit.edu walter.tromm@kit.edu
NRI-UJV	jiri.zdarek@ujv.cz petr.kadecka@ujv.cz
NRG	huntelaar@nrg.eu
SCK-CEN	jan.wagemans@sckcen.be rafi.benotmane@sckcen.be
SNETP	gilles.queneherve@lgi.earth
STUBA	jakub.luley@stuba.sk
U-STUTT	joerg.starflinger@ike.uni-stuttgart.de
VTT	arto.kotipelto@vtt.fi petri.kinnunen@vtt.fi



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Summary

The present document is the description of the Factsheet which identify the facilities of the European User Facility Network set up within the framework of the OFFERR project. The Factsheet has three purposes:

- 1) Providing a technical description of the facility to help visiting teams identify potential facilities matching the needs for the intended experimental activities. This is managed by a general technical page together with a more specific page for facilities of similar type,
- 2) Reminding and identifying potential technical conditions, of safety or administrative that could limit the feasibility of the proposed activities for the facility, and
- 3) Confirming the commitment from the facility owner to participate in the process of transnational access to facilities with the conditions of OFFERR and of the funding from EC/EURATOM.



Project summary

The overarching objective of OFFERR project is to support the SNETP association to establish an operational scheme facilitating access for R&D experts to key nuclear science infrastructure – hereinafter referred to as “User Facilities” – through the channelling of financial grants provided by the Euratom programme. The beneficiaries of the scheme will be, first, the User Facilities to be funded directly from the OFFERR project for their services provided to selected projects selected through OFFERR calls, and second, the research teams that have successfully applied through the calls and were allowed to use the User Facilities for their project purposes – hereinafter referred to as “Visiting Teams”.

References

[R1]	EU OFFERR Grant Agreement n°101060008
[R2]	CHANDA Euratom Project https://cordis.europa.eu/project/id/605203 and http://www.chanda-nd.eu/
[R3]	ARIEL Euratom Project https://www.ariel-h2020.eu/index.php/en/
[R4]	ENEN+ Euratom project Project https://plus.enen.eu/
[R5]	EJP-CONCERT Deliverable D6.6 “Publishing the web-handbook including protocols issued from harmonization procedures”

Abbreviations and acronyms

ACRONYM	DESCRIPTION
EUFN	European Facility Network
IP	Intellectual Property
OFFERR	eurOpean platForm For accEssing nucleaR R&d facilities
WP	Work Package



1. Role and context for the Factsheets

In the framework of the OFFERR project, financial support from EC (EURATOM) will be made available to User Facilities and Visiting Teams for transnational access. The financial support will be granted to proposals jointly prepared and agreed by the visiting team and the user facility after an independent validation and evaluation of proposals.

In order to facilitate the preparation of such proposals, OFFERR requires that the facilities candidates for funded visits prepare a Factsheet. The Factsheet has three purposes:

- 1) Providing a technical description of the facility to help visiting teams identify potential facilities matching the needs for the intended experimental activities. This is managed by a general technical page together with a more specific page for facilities of similar type,
- 2) Reminding and to identifying potential technical conditions, of safety or administrative that could limit the feasibility of the proposed activities for the facility,
- 3) confirming the commitment from the facility owner to participate in the process of transnational access to facilities with the conditions of OFFERR and of the funding from EC/EURATOM.

It should be noted that, within OFFERR, there are two types of proposals: FastTrack and complex proposals. FastTrack proposals are limited to a total OFFERR EC funding (User Facility + Visiting Team) of less than 50 k€ and a duration of the experimental activity (once started) of less than 6 months.

FastTrack proposals are subject to less conditions and their selection and evaluation should be simpler and faster. Several tens of FastTrack proposals are expected along the four years of the OFFERR project.

The complex proposals might have more conditions and require more time but can request up to 1 M€ OFFERR support. Less than twenty complex proposals are expected along the OFFERR duration and very few of them above 300 k€.

The preparation of the Factsheet started by identification of needs from previous experiences in the projects CHANDA [R2], ARIEL[R3], ENEN+[R4] and CONCERT[R5]. Several drafts had been reviewed with the comments given in the OFFERR-WP1 Kick-off meeting (2022/09/08) and the technical progress meetings of WP1 (2022/10/12 and 2022/11/10).

There will be several Factsheet formats:

- For the collection of data, the Factsheet is an excel document (that can be converted to word). This format will be the main reference for the present deliverable.
- In addition, to display the final version of the Factsheet it will be possible to access them as webpages or as formatted documents (most probably pdf and html).

2. Format for the infrastructure Factsheet entries

For the collection of the Factsheet data, an excel file with 4 tabs (4 pages) will be used.

- The first page will include general technical questions.
- The second page covers administrative, safety and regulatory topics.
- The third page includes specific technical questions that differentiate one facility from others used for similar topics (only the example corresponding to nuclear data is fully available at the time of the preparation of the deliverable).
- The fourth page includes the list of available choices for clusters, activities, technologies and modes of operation. These lists allow to offer selectable menus to some questions and will help to obtain coherent answers facilitating the classification and search of facilities.

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In total the Factsheet has 24 general + [5-10] specific questions. The actual questions are displayed in the section 4 below.

Before answering to the Factsheet forms, the institutions are suggested to consider the right level to present their facilities and experimental capabilities. Indeed, for very versatile facilities able to provide very different types of experiments, it is proposed to consider splitting the facility into several sub-facilities and then preparing one Factsheet for each sub-facility. On the other hand, there is the possibility to provide a Factsheet in reference to a collection of facilities for information, although, in any case, before a proposal can be submitted to a specific facility, the individual facility Factsheet must be available for OFFERR (mainly as a confirmation from the owner of the facility accepting the commitments and rules required to be eligible to receive EC support funds for this purpose).

Each question of the Factsheet is assumed to be self-explanatory, and there are indications of the type of data expected and an explanation with a range of possible answers or some examples.

The Factsheet includes fields that are not mandatory, because it might not be applicable to the type of activities performed in that facility, or because it is difficult to answer them a priori and in a generic way before there are discussions on the precise activity of each proposal. This might be the case for complex proposals, and, in this case, there could still exist a valid answer for FastTrack proposals. So, the facility can leave these questions empty but it is encouraged to provide that data (if applicable) as it will help a lot for the preparation and fast evaluation of proposals, particularly for FastTrack proposals.

For some questions, we propose a selectable list (“Text from list”) to help us grouping similar facilities and providing hints to researchers looking for facilities. Facilities are encouraged to select one of the options from the provided “Lists”, but, if no option is well suited, they can propose an alternative answer.

For entries where the data to be provided includes text and graphs, the facility can provide the data within the excel file or, if needed, in a word document and indicating the name of the word file within the excel file (field for values).

It should be noted that entries G5, G11, M5, M6, M7 and M8 should be taken as a reminder of potential issues affecting the feasibility of experiments, in particular facilities, but may be non-applicable for many facilities or for FastTrack activities in some facilities.

Particular attention deserves the point M2, dedicated to “Unit costs”, because even when it is not mandatory (as it might be very difficult to estimate them before specifying the activities of the proposal), it is very helpful if provided, particularly for FastTrack activities. Unit costs facilitate the estimation of costs for the potential applications, the evaluation of the proposals and the justification of costs towards the EC. However, the actual estimation of cost to be included in the proposal must, in all proposals, be discussed and agreed between the visiting team and the facility.

Finally, the tab with specific technical data is only available as an example for “Nuclear data” types of experiments. For other types of facilities, it should include 5 to 10 important parameters that differentiate each facility and their capabilities from other facilities of the same type.



3. Content of the infrastructure Factsheet

Even when the actual template of the Factsheet is included in the following section (4), in this section we review the content of the two general pages of the Factsheet.

3.1. General technical questions

The first page will include general technical questions:

- Identification of the facility: including the name of the facility, the acronym, its detailed address and the owner institution. The answer is expected as plain text.
- Local contact person(s): including the name, position, e-mails, telephone and any other form of contact for the persons defined as local contacts. These persons should help potential visiting teams to identify if the activity can be performed in the facility and to prepare the joint proposal. The answer is expected as plain text.
- Generic technical description: A description of the facility, not too long (half a page), but enough to identify if the facility can be used for the intended activities, including references to bibliography and web pages for details. Specific detail parameters for a given application can be included but should better be included in the corresponding specific data tab (third page). The answer is expected as text with links and figures, graphs and representative pictures, including the logo for the facility.
- Mode of operation: The answer is to be selected from a list displayed by the excel file for this question. The possibilities are: Experiment fully run by the facility; Experiment run by facility operators with materials or equipment from the visitors; Experiment run by facility and visitors together; Experiment run only by visitors.
- Planning considerations: The answer should include information that could affect the planning of experiments like the typical duration of experiments, if there is a lag period to prepare the facility or for other reasons, what is the typical schedule of operations of the facility and whether there are periods of the year not allowing experiments, also the possibility and limitations of the flexibility in the planning of the experiments in the facility.
- Type of experiments performed in the facility: The answer is to be selected from a list displayed by the excel file for this question. The different types could depend on how to use the facility (instrument) and the type of results obtained. Examples: Gamma source, Sodium loop, HLW Lab, Radiochemistry lab, Accelerator based neutron source. The actual list of options can be found in the page 4 of the Factsheet (see in the next section).
- Secondary type of experiments performed in the facility: To be included in case more than one type of experiments can be performed in the facility. Use the same format and options as for the previous item.
- Keywords for fields of applications: Keywords that can help potential visiting teams to identify candidate facilities complementing the two previous items with free text. This can be used to indicate more than two types of experiments, when the type of experiments is not in the selectable list, or more specific types of experiments. It is also convenient to include areas where the facility had been used before. E.g.: Neutronics, Thermal-hydraulics, Safety, Waste management, Fuel fabrication, ... The answer is expected as plain text.
- Cluster that could use the facility: The answer is to be selected from a list displayed by the excel file for this question that includes the list of clusters of facilities identified in the project (OFFER clusters). The facility should select the cluster the closest to the use of the facility. For versatile facilities, the options of ALL clusters or generic super-clusters are provided. The actual list of options can be found in the page 4 of the Factsheet (see in the next section).



- Secondary cluster that could use the facility: To be included in case more than one cluster can use the facility, using the same format and options as for the previous item.
- Technologies of application: The answer is to be selected from a list displayed by the excel file for this question that includes: GEN II, GEN III(+), GEN IV, Medical, Other, Fission, ALL.
- Secondary technology of application: In case more than one technology can use the facility, using the same format and options as for the previous item.
- Examples of success proposals for the facility: Brief description of previous success projects with references and contact persons of the facility and of the visiting team. The answer is expected as plain text.
- Applicable norms, standards, and support: Standards required/available (for example for electronics, DAQ, gas, cooling...). Also, special support services or instruments available in the facility and that can enlarge the type of experiments possible in the facility. If nothing special is required, the item can be left empty. The answer is expected as text with links and figures or graphs.

3.2. Administrative, safety and regulatory topics

The second page covers administrative, safety and regulatory topics:

- Facility offered for FastTrack activities: the answer should be YES or NO. YES indicates that the facility is ready to accept proposals for FastTrack as well as for complex activities, whereas NO indicates that only complex proposals are acceptable. FastTrack activities are limited to less than 50 k€ financing from OFFERR and less than 6-month access to the infrastructure, but its selection and evaluation criteria are simpler and faster.
- Unit cost estimation: Estimation of the unit cost applicable to the OFFERR activities (cost per hour, day, neutron, analysis, irradiation, sample, ...). Otherwise, it can be expressed as the maximum duration of a FastTrack (50 k€) experiment. For complex proposals, the estimation might be a range or another indicative form. It should be noted that the cost for OFFERR can be only a fraction of the total cost if the facility has other sources of financing for these types of activities. On the other hand, in no way these unit cost can be taken as a tariff for commercial activities in the same facility. Although not mandatory, unit cost is highly recommended for FastTrack activities. Must be a value or range of values with units (€/day, €/analysis, #days, #samples, ...).
- Amount of access committed by the facility to OFFERR: Indicates the minimum annual or total amounts of resources (time, procedures, neutrons, dose, ...) committed by the facility, that will be available for the total of proposals approved for the facility.
- Commitment of the facility owner to provide technical support and administrative information: the answer can be YES or NO but this commitment is required to fulfil the corresponding obligations to the EC from the project. Includes providing actual costs or updated actual unit costs. Only facilities with YES in this item are eligible for proposals that can be funded by EC/EURATOM via OFFERR.
- Applicable Intellectual Property and data protection protocols of the facility: This item should indicate if there is any constrain in the sense that data from the experiments in that facility can or must be publicly available or in the contrary if they are limited. If limited, it should indicate whether the distribution includes only the visiting team and the facility; all the members of OFFERR; or other groups. The answer is expected as plain text with references but may be empty or "None".
- Eventual requirements of insurance for people or materials: Eventual requirements of insurance for people or materials when accessing the facility, also including information if people or equipment are covered by any insurance from the facility during their presence in the facility. The answer is expected as plain text with references but may be empty or "None".



- Safety procedures, limitations and rules: Limitations and rules to be applied (for personnel (training), samples, equipment, ...) and procedures for the management of radioactive materials imported, used or produced in the experiments. The answer is expected as plain text with references but may be empty or “None”.
- Safety conditions (nonradioactive): Any safety constrain or concern like the following: fire, temperature (high or low), pressure, fluids, mechanical and heavy loads, electricity and HV, magnetic fields, underground experimental areas, confidentiality limitations, or others. The answer is expected as plain text with references but may be empty or “None”.
- Owner is beneficiary or member of the consortium?: the answer can be YES or NO, and may affect the evaluation and set-up of administrative procedures, particularly for large complex experiments. If the funding is larger than 300k€, the facility owner must be a member of the consortium and need an amendment of the grant agreement if the owner doesn't belong to the consortium.
- Formal commitment: Name and position of the person approving the proposal of the facility to participate in OFFERR, including the acknowledgement of estimates and commitments provided in the Factsheet. Actual signature from this person will be needed before any proposal to the facility can be eligible for funding and will cover the agreement to the rules for participation in OFFERR and for funding from the EC/EURATOM.
- Revision of the Factsheet: a version number (Major.Minor) for the present version of the Factsheet. A new minor revision should be used if data is modified without significant changes for potential experiments. For more important changes a new major revision should be used.
- Date of the revision.

3.3. Specific technical questions

The third page includes specific technical questions that differentiate one facility from others used for similar topics. Only the example corresponding to nuclear data is fully available at the time of the preparation of the deliverable. The actual content of the third page for other types of facilities will be developed from the information collected from the first round of Factsheets prepared by the OFFERR facilities.



4. Factsheet template for the collection of data



GENERAL TECHNICAL PART OF THE OFFERR FACTSHEET

Version of the Factsheet template

1

Date of template

12/11/2022

	Mandatory	Description of the data	Type of data	Value	Explanation, range, examples
G1	ALL	Identification of the facility	Text		Name of the facility, owner institution and detailed address
G2	ALL	Local Contact person(s)	Text		Name , position, e-mails, telephone and any other form of contact
G3	ALL	Generic technical description	Text and graph		Not too long (half a page) but including references and web pages for details. Specific detail parameters for a given application in the corresponding specific data tab + illustrative pictures and logo
G4	ALL	Mode of operation	Text from list	Experiment run by facility and visitors together	Experiment fully run by the facility, run by facility operators with materials or equipment from the visitors, run by facility and visitors together, run only by visitors
G5		Planning considerations	Text		Typical duration, lag period, schedule and periods of the year for experiments. Possible flexibility
G6	ALL	Type of experiments performed in the facility	Text from list (may be empty)	Accelerator based neutron source	Types from the perspective of how to use the facility (instrument) and type of results obtained. Examples: Irradiation facility, TH loop, Hot Lab, Radiochemistry lab, Neutron source,...
G6b		Secondary type of experiments performed in the facility	Text from list (may be empty)	Neutron radiography and tomography	
G7		Keywords for fields of applications	Text free	Neutronics, Nuclear Data	Fields where the facility results had been used. E.g.: Neutronics, Thermalhydraulics, Safety, Waste management, Fuel fabrication,...
G8	ALL	Cluster that could use the facility	Text from list	Modelling and Simulations Area	List of clusters (OFFERR clusters) that could use the facility
G8b		Secondary Cluster that could use the facility	Text from list	Neutronic Research Area	
G9	ALL	Technologies of application	Text from list	All	GEN II, GEN III(+), GEN IV, Medical, Other, Fission, ALL
G9b		Secondary technology of application	Text from list		
G10		Examples of success proposals for the facility	Text		Brief description of previous success projects with references and contact persons of the facility and of the visiting team.
G11		Applicable norms, standards and support	Text and graphs		Standards needed/available (Electronics, DAQ, gas, cooling,...). Special support services or instruments.



GENERAL MANAGEMENT PART OF THE OFFERR FACTSHEET

	Mandatory	Description of the data	Type of data	Value	Explanation, range, examples
M1	ALL	Facility offered for FastTrack activities	YES/NO	YES	Can your facility accept proposals for FastTrack activities? Note that FastTrack activities are limited to less than 50 k€ financing from OFFERR and less than 6 month access to the infrastructure.
M2		Unit cost estimation	Numeric value with units (€/day, €/analysis, #days, #samples,...)		Unit cost applicable to the OFFERR activities (per hour, day, neutron, analysis, irradiation, sample,...) or maximum duration of a FastTrack (50k€) experiment. For complex proposals the estimation might be a range or another indicative form. Note that the cost for OFFERR can be only a fraction of the total cost if the facility has other sources of financing for these types of activities. Also note that in no way these unit cost can be taken as a tariff for commercial applications.
M3	ALL	Amount of access committed by the facility to OFFERR	Text		Minimum annual or total amounts of resources, time or procedures committed by the facility
M4	ALL	Commitment of the facility owner to provide technical support and administrative information	YES/NO	YES	This commitment is required to fulfil the corresponding obligations to the EC from the project. Includes providing actual costs or updated actual unit costs
M5		Applicable IP and data protection protocols of the facility	Text and references		Data can/must be publicly available or they are limited to the visiting team and the facility? to the members of OFFERR? to other collectivises?
M6		Eventual requirements of insurance for people or materials	Text and references		Eventual requirements of insurance for people or materials when accessing the facility. Also provide information if people or equipment are covered by any insurance during their presence in the facility
M7		Safety procedures, limitations and rules	Text and references		Limitations and rules to be applied (for personnel (training), samples, equipment,...). Management of radioactive materials imported, used or produced in the experiments.
M8		Safety conditions (non radioactive)	Text and references		Fire, temperature (high or low), pressure, fluids, mechanical and heavy loads, electricity and HV, magnetic fields, underground experimental areas, confidentiality limitations, ... ?
M9	ALL	Owner is beneficiary or member of SNETP	YES/NO	YES	
M10	ALL	Formal commitment	Name and position		Acknowledge the estimations and commitments. Name and position of the person authorizing the commitments.
M11	ALL	Revision of the Factsheet	Version number		(Major.Minor) New minor revision if data is modified without significant changes for potential experiments, otherwise new major revision
M12	ALL	Date of the revision	Date		



**SPECIFIC PART OF THE FACTSHEET FOR (N, LCP)
SOURCES FOR NUCLEAR DATA MEASUREMENTS**



	Description of the data	Type of data	Value	Explanation, range, examples
SND1	Type of particles produced by the source	Particle name		Might be neutron, proton, alpha, other light charged particle (lcp). There could be several particle types, in this case the block of data should be repeated.
SND2	Neutron or ion source energy spectrum	Description, Range, value, graph		Description: Discrete, Quasi-monoenergetic, wide range, thermal, fission, fusion,... Value(s) in case of discrete energy spectrum, text plus graph in other cases. A reference could be provided in addition.
SND3	Intensity of the neutron/ion source	Numerical value		The units should be indicated and explained if necessary.
SND4	Time structure of the neutron source at target and for the accelerator current	Description text values (and graph)		Continuous, pulsed, duty cycle, repetition frequency
SND5	Size / mass / activity acceptable for targets/samples	Numerical value(s)		Indicate the limitations in size, mass or activity for samples to be acceptable in the facility
SND6	List of accessible experimental areas and/or available irradiation rigs	Description text and graph		Description including main features, graphical illustration and reference for additional details
SND7	Specific backgrounds in the target area	Description text and graph		Facility backgrounds (gamma, neutrons, charged particles,...) indicating the space, temporal and energy distributions. References for additional details.
SND8	Potential risks for detectors/samples near the irradiation area	Description text		For example is there a halo, beam tails or the scattered particles that could degrade the performance or permanently damage the detectors (like neutrons on HPGe)? Are there any risk from temperature, mechanical or chemical conditions for the samples or the detectors?



The list tab (page) includes 4 lists. The present value for the release of 12/11/2022 are:

List 1 Technologies: GEN II; GEN III(+); GEN IV; Medical; Other; All; Fission

List 2 Mode of operation: Experiment fully run by the facility; Experiment run by facility operators with materials or equipment from the visitors; Experiment run by facility and visitors together; Experiment run only by visitors

List 3 Clusters: Neutronic Research Area; Radiation and Radiation Protection Research Area; Radiochemistry Research Area; Thermal hydraulic Research Area; Material Research Area; NPP Safety Research Area; Modelling and Simulations Area; Nuclear Waste Area (EURAD); Radiation Protection (PIANOFORTE)

List 4 Types of experiments performed in the facility (according to the Research Area definition for Clustering):

<p>Cluster 1 – Neutronic Research Area</p> <ol style="list-style-type: none"> 1. Neutron sources <ol style="list-style-type: none"> a. Research/School reactor b. Critical/sub-critical assemblies c. Radioisotope source d. Accelerator based neutron source 2. Reactor physics experiments (non-reactor) 3. Neutron detection/detectors <ol style="list-style-type: none"> a. Fission Chambers manufacture & tests 4. Neutron dosimetry 5. Nuclear data and neutron reactions 6. Neutron radiography and tomography 7. Post-Irradiation Examination 8. Forensic <p>Cluster 2 – Radiation and Radiation Protection Research Area</p> <ol style="list-style-type: none"> 1. Radiation sources/Irradiation facilities <ol style="list-style-type: none"> a. Gamma sources b. Proton sources c. Heavy ion source d. Positron source 2. Radiation detection/Dosimetry 3. Shielding 4. X-ray radiography/tomography/ spectroscopy 5. Gamma spectrometry 6. Analytical platforms 7. Databases <p>Cluster 8 – Nuclear Waste Area (EURAD)</p> <p>Cluster 9 – Radiation Protection (PIANOFORTE)</p>	<p>Cluster 3 – Radiochemistry Research Area</p> <ol style="list-style-type: none"> 1. Radiochemistry 2. Nuclear fuel chemistry 3. Radiopharmaceutical chemistry 4. Radiotracers <p>Cluster 4 – Thermal hydraulic Research Area</p> <ol style="list-style-type: none"> 1. Cooling media loops <ol style="list-style-type: none"> a. Water loop b. SCW loop c. Sodium, NaK loop d. LBE or Lead loop e. Gas loop (He or CO2) f. Molten salt loop 2. Fuel assembly or heat exchanger mock-up 3. Advanced temperature measurements <p>Cluster 5 – Material Research Area</p> <ol style="list-style-type: none"> 1. NON-destructive testing 2. Mechanical testing 3. Material production or processing 4. Material structure and metallurgy 5. Corrosion and environmentally-assisted cracking (EAC) testing 6. Chemical analysis 7. Advanced manufacturing technology 8. Nuclear fuel 9. Sensors Manufacture & Tests 	<p>Cluster 6 – NPP Safety Research Area</p> <ol style="list-style-type: none"> 1. I&C Area 2. External Hazards 3. Internal Hazards 4. Full-scope simulator 5. Decommissioning 6. Robotics 7. Severe accidents 8. Aerosols behaviour 9. Shaking table 10. Thermal Ageing 11. Fire Experiments 12. Loca Bundle test 13. ATF cladding material test 14. Hydrogen mitigation 15. Passive auto-catalytic recombiners 16. Pool scrubbing 17. Thermo-fluidynamics <p>Cluster 7 – Modelling and Simulations Area</p> <ol style="list-style-type: none"> 1. Engineering simulations 2. Digitalization and virtualizations 3. Research areas <ol style="list-style-type: none"> a. Neutronics b. Thermohydraulics c. Thermomechanics d. Material structure e. Multi-physics f. PSA 4. Post-treatments
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