

# JA3 Waste forms and their behaviour (C14)

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# FP7-Fission-2013 – Nuclear Fission, Safety and Radiation Protection

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## Fission-1.1.1

*Support to the IGD-TP SRA and to advances and innovation research in the treatment and/or understanding of key basic and remaining scientific technical issues*

Indicative budget for all of Fission-1 (there are 2 parts: Fission-1.1.1 and Fission-1.1.2) is 5M EURO.

Deadline: 13 November 2012

[http://ec.europa.eu/research/participants/portal/page/euratom;efp7\\_SESSION\\_ID=xPXYQT1QWyhxVNvZn21rnCDr9SByKTvVK9pWvt2T5Ljy2brIT1Gg!-1335232505?callIdentifier=FP7-Fission-2013](http://ec.europa.eu/research/participants/portal/page/euratom;efp7_SESSION_ID=xPXYQT1QWyhxVNvZn21rnCDr9SByKTvVK9pWvt2T5Ljy2brIT1Gg!-1335232505?callIdentifier=FP7-Fission-2013)



# C14 problem

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Carbon-14 release identified as possible issue in many countries.

Range of C14 containing wastes.

Lack of information on release rates and speciation of C14.

Better understanding of source term of benefit to all.

Carbon-14 Source Term (CAST).



# Questionnaire process

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Questionnaire was sent to interested parties earlier this year asking for information on:

- Description of national wastes containing C14.
- C14 in contexts of national programmes.
- Research related to generation of C14 species and results.
- National on-going or planned research into C14.
- How the international project could contribute to information needs on the generation of C14 over the coming years.



# Questionnaire results

20 responses were received. Main waste materials of interest:

Country	Graphite	Steels	Zircaloy	Ion Exchange Resins	Other*
Belgium	X	X	X	X	X
Czech Republic	X	X	X	X	X
EU					
Finland	X	X		X	
France	X	X	X	X	
Germany	X	X	X		X
Italy	X				X
Japan	X	X	X	X	
Lithuania	X	X	X		
Netherlands		X	X		
Portugal	X				
Romania	X	X		X	X
Serbia	X	X			X
Sweden		X	X	X	X
Switzerland		X	X	X	X
UK	X	X			
Ukraine	X				

\* 'Other' covers organic species, medical, industrial and research wastes, and biological sources (see below)



# Questionnaire results (2)

On-going or planned national studies:

Country	Graphite	Steels	Zircaloy	Ion Exchange Resins	Other*
Belgium					
Czech Republic					
EU	X				
Finland		X			
France	X	X		X	
Germany	X				
Italy	X				X
Japan	X	X	X		
Lithuania	X	X			
Netherlands					
Portugal					
Romania	X	X		X	
Serbia	X				
Sweden		X		X	
Switzerland		X		X	
UK	X	X			
Ukraine	X				

\* 'Other' covers research into other topics, for example migration of C14 into the near field and geosphere.



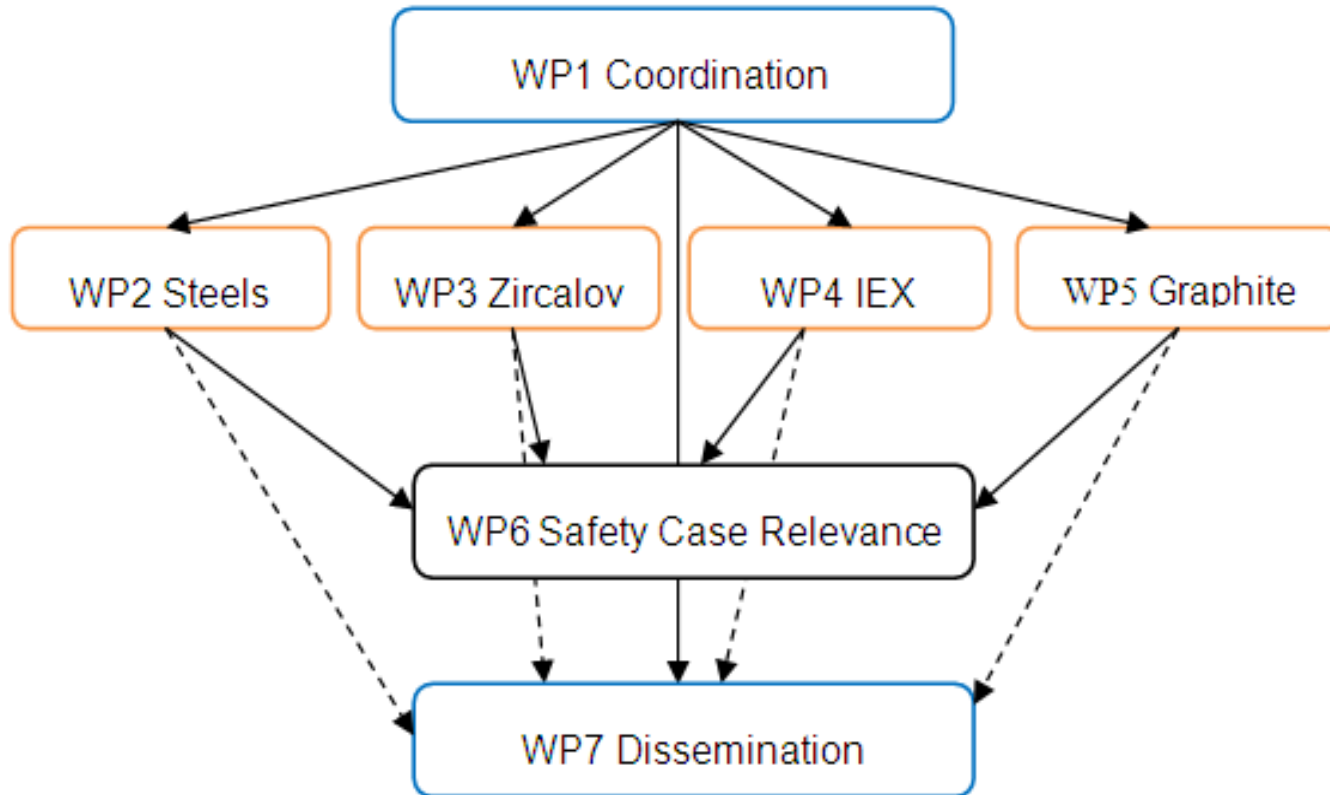
# CAST Partners

Partner	Country	Partner	Country	Partner	Country
NDA RWMD	UK	FZJ	Germany	SKB	Sweden
Nagra	Switzerland	ITU	Germany	CNRS/IN2P3	France
Andra	France	UJV	Czech Republic	Amec	UK
CEA	France	Enresa	Spain	Ciemat	Spain
Ondraf/Niras	Belgium	NRG	Netherlands	Areva	France
Covra	Netherlands	VTT	Finland	EdF	France
INR	Romania	Fortum	Finland		
GRS	Germany	LEI	Lithuania		
PSI	Switzerland	SI IEG NASU	Ukraine		
SCK.CEN	Belgium	Subatech	France		
KIT	Germany	FNAG	Germany		
ENEA	Italy	IFIN-HH	Romania		
RWMC	Japan	Rawra	Czech Republic		



# Cast work packages

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# Work package leads

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## Work Package leads

- WP1 Coordination - NDA
- WP2 Steels - Nagra
- WP3 Zircaloy - Andra
- WP4 Ion-exchange resins - CEA
- WP5 Graphite - NDA
- WP6 Safety case relevance - Ondraf/Niras
- WP7 Dissemination - Covra



# Current Status

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Current status of proposal:

- Proposal submitted
- 54 month programme of work
- Approximately 700 months effort
- Approximate total value of work 14.4 M€ (significant contribution from Japan)
- Requested EU contribution approximately 4.51 M€

