

# Agenda

## 2<sup>nd</sup> Meeting of INDUSE-2-SAFETY (RFS-PR-13056)

COMPONENT FRAGILITY EVALUATION, SEISMIC SAFETY ASSESSMENT AND DESIGN OF  
PETROCHEMICAL PLANTS UNDER DESIGN-BASIS AND BEYOND-DESIGN-BASIS ACCIDENT CONDITIONS

[www.induse2safety.unitn.it](http://www.induse2safety.unitn.it)

Aachen, Germany, 26-27 February, 2015

**Venue:** Zentrum Metallische Bauweisen (**ZMB**)  
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52074 Aachen, Germany

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***Note: Partners mentioned in brackets are invited to offer presentations on the relevant topics.  
Remaining partners are free to present and discuss as well.***

**Thursday, 26 February 2015**

- 10.00-10.10** Welcome to participants and meeting arrangements
- 10.10-10.40** Administrative aspects of the project (reports, deliverables, deadlines, etc.) [UNITN].
- 10.40-10.55** Coffee break
- 10.55-13.00** Discussion of WP1: Analysis of “special risk” petrochemical plants subjected to seismic loads.
- 10.55- 12.15:**
- WP1/Task 1.2: Selection of a representative petrochemical plant and sub-plants. Case Study #1 and #2 [IGF, UNIRM3].
  - Discussion of Deliverable D1.1: Report on selection of a representative “special risk” petrochemical plant and sub-plants [IGF].
- 12.15 - 13.00:**
- WP1/Task 1.3: Site seismic hazard analysis and input selection for a petrochemical facility [UNIRM3].
  - Discussion of Deliverable D1.2: Report on seismic hazard analysis for seismic input selection [UNIRM3].
- 13.00-14.00** Lunch Break
- 14.00-14.30** Discussion on WP1
- WP1/Task 1.4: Definition of seismic design categories and limit states for main components/systems [UNITN].
  - Discussion of Deliverable D1.3: Report on Definition of seismic design categories and limit states for main components/systems [UNITN].
- 14.30-16.10** Discussion on WP2: FE models and simulations of systems involving complexity/uncertainties.
- WP2/Task 2.1: Modelling of complex systems by means of detailed FE and dynamic substructuring.
- Modelling of Cathedral Type Heater and Pressure Vessel [RWTH].
  - Modelling of tanks of Case Study #1 [UTHESSA].
  - Modelling of the piping system attached to the tank of Case Study #2 [CSM].

- Modelling piping systems with tee joints, flange joints attached to tanks of Case Study #1. Modelling of the foundation and partial modelling of the Big tank of Case Study #2; [UNITN].

**16.10-16.25:** Coffee break

**16.25-16.50:** WP2/Task 2.3: Simulation of complex systems taking into account dynamic substructuring errors and uncertainties [UNITN].

**16.50-17.20:** WP2/Task 2.4: Smart geometric configurations and isolation devices for vibration reduction [LPOOL].

**20:00** Dinner – the place of dinner will be announced during the meeting.

***Friday, 27 February 2015***

**09.15-10.00** Discussion of WP3: Numerical evaluation of fragilities for support structures, pressure vessels, elevated tanks and heaters.

- Step-by-step procedure for producing fragility curves and application to tanks [UNIRM3].

**10.00-10.50** Discussion on WP4: Experimental testing of piping systems, bolted flange joints, Tee joints, liquid storage tanks and welded connections.

- WP4/Task 4.2: Preliminary experimental set-up for mechanical characterization tests [CSM].
- WP4/Task 4.3: Preliminary experimental set-up for low-cycle fatigue tests on tanks [UTHESSA].

**10.50-11.05** Coffee break

**11.05-12.20** Discussion on WP4: Experimental testing of piping systems, bolted flange joints, Tee joints, liquid storage tanks and welded connections.

- WP4/Task 4.6: Prel. Experimental set-up for cyclic testing of Tee joints [UNITN].
- WP4/Task 4.7: Prel. Experimental set-up for shaking table tests on tanks [CEA].
- WP4/Task 4.1: Specifications to be provided by partners to WTOSTO for constructions of specimens and set-ups [WTOSTO].

**12.20-12.50** Discussion of WP6: Seismic probabilistic risk assessment of a petrochemical plant

- Step-by-step procedure to perform quantitative risk assessment (QRA) [UNIRM3].

**12.50-13.00** Date & Place of next meeting, any other business and closure of meeting.