

Task Group – Non-linear Design Rules

www.eperc-aisbl.eu

Claude Faidy

EPERC TG4 Chairman

claude.faidy@gmail.com

Agenda of the third Teams[®] meeting of TG4

Thursday May 12th, 2022**14:00 – 17:00 CET**

1 Welcome of the participants

2 Remarks on previous meeting minutes

3 Remember EPERC Strategic Plan

- Comparison of International Codes & Standards
- Identification of Gaps & Needs with Code Organization and Industry
- Developments of R&D programs associated to dedicated Road Map developed by topics at the TG level
- Development of Recommended Practices with all the rules validation
- Performance of Benchmarks on practical cases
- Code Case Proposal
- Knowledge transfer through: Regular Thematic Technical Seminars, International Conference, Training courses, Master Classes, Summer School, Reports and Documentation
- Communication and Registration to different EPERC Activities through: www.eperc-aisbl.eu

4 Overview of the EPERC TG4 Road Map

4.1 WP1 : International Codes comparison

4.2 WP2 : Major failure Mode to Consider

4.3 WP3 : Major Degradation Mechanisms

4.4 WP4 : Flaw Tolerance

4.5 WP5 : Specific Cases

4.6 WP6 : Preliminary Recommended Practices

4.7 WP7 : EPERC TG4 R&D program

4.8 WP8 : Benchmarks

4.9 WP9 : Final Recommended Practices

4.10 WP10 : Synthesis and Code Cases Proposals

4.11 WP11 : Knowledge Transfer

5 Selected Topics for this 3rd meeting

5.1 Up-date and supplement existing Code comparison

- EN Standards
- ASME BPVC Section VIII
- ASME B 31 Standards
- API Standards
- RCC-M and RCC-MRx Standards
- Others

5.2 Develop our 1st report on "Recommended Practice for inelastic analyses"

3 steps:

- bibliographic review
- status of EN Standards for Vessels, Piping and Boilers
- recommended practices

3 analysis methods:

- limit analysis
- monotonic elastic-plastic analysis
- cyclic elastic -plastic analysis

Note: creep effect will be treated in EPERC TG Creep

5.2.1 Monotonic loads

- Plastic collapse
- Plastic instability
- Buckling

5.2.2 Cyclic loads

- Progressive deformation (or ratcheting)
- Fatigue:
 - evaluation of plasticity coefficient (K_e , K_v , K_f ...)
 - cyclic strain evaluation

5.2.3 Fracture

- Reference stress method → plastic limit analysis of "typical" cracked components

5.2.4 Creep consequences

- later

5.3 TG4 participant involvements

- Code Comparison Participant Contributions?
- Bibliographic Review Participant Contributions?
- Status of EN Standards Participant Contributions?
- Recommended Practices Report contributions?

5.4 Any other TG4 Topic and final list of actions

MEETING CLOSING
