EPERC

TG4 : Nonlinear Design Rules

Meeting report

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Action List (1/2)

- **Update the Scope** definition: vessels + piping , pumps, valves and support… (CF), consider buckling (no creep)
- **Membership** to be enlarged in many directions: other EC countries, Industry, Research Center, Universities… (CF + EPERC Website update + BOD)
- **Develop a Technical Report** on Nonlinear Design Rules Open Points and Recommendations (Validation + Practical Rules) (CF)
- **Perform a detailed comparison of existing European and International Codes** considering "nonlinear design rules" (plasticity, stress classification, maximum load, reference stress…) (CF)
- **Review the RINA Report** on **Triaxiality Local Failure Criteria** (Report to be released by RINA to TG4 members for review)
- **Collect ASME VIII Background** of alternative NL approach for local failure (CF + all TG4 members)

ACTION LIST (2/2)

- Possible Partial Financial Support by RFCS-"Research Fund for Coal and Steels": analyze the 2015-2018 Projects to understand the potential scope (RINA)

  https://ec.europa.eu/info/research-and-innovation/funding/funding-opportunities/funding-programmes-and-open-calls/research-fund-coal-and-steel-rfcs_en

- **Propose priorities for an experimental program partially sponsored by EC-RFCS:**
  - What kind of failure mode or degradation?
  - What kind of components / material / Temperature / Environment?
  - Why Non-linear Analyses?
  - Project added value: C&S improvement?

  by all TG4 members before end of Feb. 2020 !!!!
- Release info on "ANL Fatigue model" and "Experimental Tests on cracked pipes" (CF)
- Define a synergy between TGs "NL Design Analysis" "Fitness for Service" and "Creep" (CF)
- Prepare a Seminar on NL analysis for 2-3 days (CF + David NASH)

TG4 Conclusions

- Very active TG, continuation of increase new members from many European Countries, including Industry, Research Centers, Universities….
- An update Scope will be proposed (CF): following the Milan Conference discussion
- A synergy with TG1- TG6- TG7 will be defined between the 3 TG Chairmen and all the TGs members
- A new project has to be defined with RFCS after checking type of potential subject (all TG members)
- A set of Reports have to be prepared to request support to CE/CEN using their proposed tools (CF + all TG4 members)