framatome

CENTRE DE FORMATION REACTEURS FRAMATOME ACADEMY

Elastic Analyses according to RCC-M[1] – Primary Stresses and Fatigue

afcen

Course

Damage sequences ▶ ***Elastic analyses according to RCC-M code*** ▶ *Analyses of fast fracture according to RCC-M and RSE-M codes*

Duration: 14 hours

Language: French, English

Participants: 12 to 15

Location: At the customer's request

Niveau 2 Advanced

Prerequisites:
Training Damage sequences, knowledge of RCC-M code.

Recommended: knowledge of ESPN

Contact: formation.reacteurs@framatome.com

You are

- Engineer or technician working on the design of mechanical pressure equipment of the nuclear island

During the training, you will

- Study elastic mechanical analysis methods of RCC-M code
- Apply these methods through simplified cases
- Discover the elasto-plastic mechanical analysis methods of RCC-M code
- Discuss the links between RCC-M and RSE-M codes[2]

After training, you will be able to

- Associate the damage sequences with the corresponding criteria of RCC-M code to be met,
- Apply RCC-M mechanical analysis methods for excessive deformation damage, plastic instability, progressive deformation and fatigue
- Knowledge of RCC-M code interpretation and evolution request processes with AFCEN

Course strengths

- Involvement of specialists and experts
- Illustrations on examples and exercises
- Exchange and sharing of experiences
- Training labeled by AFCEN[3]

Content

- Introduction and general information on RCC-M code
- Reminder of the theoretical notions of mechanical analysis, beams and shells models
- Reminders of mechanical damage sequences
- Allowable stresses
- Elastic mechanical analysis
- Notions of elasto-plastic mechanical analysis
- Excessive deformation and plastic instability
- Progressive deformation
- ESPN N1 and N2 fatigue (usage factor, thermal ratcheting, elasto-plastic correction, environmental effects)

Evaluation

- Learning assessment survey
- Assessment of trainees' satisfaction

[1] Design and Construction Rules for the Mechanical Equipment of Nuclear Islands PWR

[2] In-service inspection, Installation and Maintenance Rules for mechanical components of PWR

[3] Association that publishes nuclear codes such as RCC-M, RSE-M and technical publications (PTAN)