École des Ponts
Formation Continue
Construire les mondes de demain

Réf. 05081

FORMATION
Génie civil
Génie civil pour le nucléaire

Mis à jour le 21/03/2025

AFCEN Nuclear codes for Civil Works (ETC-C & RCC-CW) : Design - Distance learning in english

> CETTE FORMATION S'ADRESSE À

THE TRAINING IS INTENDED FOR:Experienced Civil and Structural engineers, who design or supervise the design of concrete or steel structures and intend to work on nuclear projects.Experienced designers, familiar with Eurocodes (2, 3, 7) and looking for transition training covering the key changes between the Eurocodes and the RCC-CW editions.

> PRÉ-REQUIS

PREREQUISITE:The one day training "general introduction" (ref 1456) is recommended to attend. Moreover, we recommend that each participant comes with an edition of the RCC-CW. Pre-requisites: Civil Engineering

> INFORMATIONS PRATIQUES

Modalité : Classe virtuelle
Durée : 4,00 jours

EN BREF

OVERVIEW::RCC-CW codes (Rules for design and construction of PWR nuclear civil works), published by AFCEN, are used to design and build the civil structures of nuclear power plants.RCC-CW was published in 2010 and 2012 as ETC-C for EPR nuclear power plant. The most recent RCC-CW editions (2015 to 2019) can be applied to PWR projects.

OBJECTIFS

TRAINING OBJECTIVES: The purpose of this 3-day training session is to outline the requirements of the AFCEN RCC-CW code. Dedicated to the first part (Design) of the code, it covers all the aspects of the design for Civil engineering structures of nuclear power plants (geotechnics, seismic analysis, concrete, prestressing, liner, anchorages, steel works…)

THÉMATIQUES

THEMESNuclear safety related buildings.Rules involved in the design of the Civil structures of the EPR nuclear island. Relations between the different parts of the Code.Relations between the Eurocodes and the Code. Evolutions of the code since 2010 editions.

PRINCIPES ET MÉTHODES PÉDAGOGIQUES

-Questionnaire d'autopositionnement (prérequis, expériences, attentes), fil rouge assuré par le coordinateur expert ou un référent de PFC, temps d'interaction avec le(s) expert(s) et les apprenants, apports théoriques et méthodologiques, illustrations concrètes, exemples d'application, étude de cas, quiz, retour d'experience. Evaluation des connaissances : exemples d'application, étude de cas, quiz..

EVALUATION DES CONNAISSANCES

Exemples d'application, étude de cas, quiz…

COORDINATION

Weiss GHAFOURY, EDF DIPNN Dir Indust.

Mohammed EL HAYANI, SOFREN

PROGRAMME DÉTAILLÉ

Journée	Opening and introduction to the session
Actions	Connections with Eurocode 0 Actions & combinations of actions
Seismic analysis	Representation of soil effects Modelling of structures & substructures Methods of analysis & floor response spectra
Geotechnical design	Geological, geotechnical and hydro-geological models Actions & combinations for geotechnical design
Journée **Concrete structures**	Differences from Eurocode 2 properties of the material Shear load Detailing
	Deformation imposed by shrinkage and thermal loads Minimum reiforcement with scale effect
Journée **Containment design**	- Part 1 - Prestressed concrete containment design
	- Part 2 - Containment reliability assessment - Part 3 - Example, presstressed concrete containment analysis
Journée **Anchors**	Anchor systems design
Liners	Anchored containment liner
	Pools liner
Structural steelwork	Materials Design principles Admissible deflections
	Conclusion / Evaluation