

## NOTE TO USERS

This document constitutes the 2020 edition of the RSE-M.

The new text and changes with respect to the 2018 edition of the RSE-M are identified by a vertical line in the margin. Subsections that have been completely redrafted are indicated by a double vertical line next to the heading in question. The summary table of MS and amended paragraphs in this introduction shows the extent of the changes.

This update includes changes made by modification sheets 289 to 322.

Changes made in this new edition are particularly concerned with:

### BINDER I:

- **A 2224**: clarifications concerning water properties requirements
- **A 4200**: creation of A 4222 Ultrasonic examination of welds using the TOFD technique and A 4223 Ultrasonic examination of welds using the echo and multi-element transducer technique
- **A 4300**: deletion of the term 'the main' and replacement of 'additional clearance' by '*additional qualification*'
- **A 4630** : creation of the paragraph, entitled 'Thickness measurement'
- **A 4640** : creation of the paragraph, entitled 'Cleanliness inspection'
- **A 4700** : rewriting of paragraph (additions and consistency with Appendix 4.3 - IX)
- **A 5000**: clarification concerning the procedures for operating the significant variation.
- **A 5400** : updating of references
- **A 8120** : Clarification of the possibility of using the mechanical justification rules in Appendix 5.7 in the case of cavity(e.g. for removing defects)
- **A 5300** : paragraph updated in line with the new status 'informative' of Appendix 5.2
- **B 5200** : paragraph updated in line with the new status 'informative' of Appendix 5.2
- **B 5210**: clarification concerning the acceptability criteria for defects detected on materials within the scope of volume B (MPS/MSS).
- **B 5300**: clarification of definitions for various fracture mechanics parameters.
- **B 6300** : clarification concerning the applicability
- **B 8410**: harmonization of paragraphs referring to Appendix 1.6 and 1.8.
- **B 8500**: Table B 8500-8-1, which relates specifically to the SEBIM RCS safety pilot-operated valve, added to Tables B8500, which classify maintenance operations.
- **B 5311**: addition of an explicit reference to the methods in Appendix 5.7 for *defects* in volume terms
- **B 9000**: clarification concerning the *pre-service inspection* (PSI) carried out
- **C 5200** : paragraph updated in line with the new status 'informative' of Appendix 5.2
- **C 5300** : clarification of definitions for various fracture mechanics parameters

- **C 5311**: addition of an explicit reference to the methods in Appendix 5.7 for *defects* in volume terms
- **D 4000**: creation of the paragraph, entitled 'objectives and examination techniques used for inspections'
- **D 4200** : creation of the paragraph, entitled '*Examinations*'
- **D 4210** : creation of the paragraph, entitled 'Examination of components that are susceptible to degradation in internal and external walls, leading to thinning'
- **D 8400**: incorporation of PTAN RS.18.006 for equipments subject to French regulation

## BINDER II:

- **Appendix 1.0** : creation of the status '*informative*' for the Appendix 5.2
- **Appendix 1.1**: definitions added, removed or updated.
- **Appendix 1.3** : updates to documents required by the RSE-M, with the addition of available RSE-M criteria for information
- **Appendix 1.4**: clarification on sampling procedures for volumetric examinations during maintenance operations.
- **Appendix 1.6** : updated to take account of feedback and clarifications on the information to be recorded in the *examination report* for penetrant examinations
- **Appendix 1.8** : updated to take account of feedback
- **Appendix 4.3** : consistency of influential parameters for penetrant examinations, deletion of the term '*the main*' and replacement of '*additional clearance*' by '*additional qualification*'
- **Appendix 5.0**: update of references and corrections with the new status 'informative' of Appendix 5.2.
- **Appendix 5.2** : update of references, modification of the text to be in harmony with the modifications of A 5300
- **Appendix 5.4** :
  - precision for the calculation of elastic stresses in elbows with significant reinforcement on the intrados.
  - precision in the method of calculating J under thermal load concerning the properties retained at the final temperature of the fluid ( $S_y(T)$  and  $S_y(T_f)$ ).
  - precision on the methods applicable to through-wall defects (Table I)
- **Appendix 5.5** : change in the definition of the parameter  $K_{Jc}$
- **Appendix 5.6** : for the fatigue crack growth rate of low alloy steel in PWR environment, linear interpolation as a function of R replace the linear interpolation as a function of C. Simplification of the dimensionless stress-strain curves into a single strain domain. Revision of the true stress-strain curves of Z2 CN18-10 for very low temperature strains. For thermal ageing prediction formulae, suppression of the sentence '*If P(MB) is not known, the base metal formula can be used to estimate an envelope value of the RTNDT of the subclad heat-affected zone* ', clarification of the fatigue crack growth rate in vacuum in Table 5.6-II.3
- **Appendix 5.7**: addition of a warning on the application of the rules of § II.3.2.1 in the case of elements with non-uniform thickness (e.g. cambers.) and modification of the

logic diagram in order to introduce the possibility of a finite element calculation, clarification of the possibility of non-destructive testing to use a coefficient of 1 in the mechanical analysis rules, extension of the validity of logic diagram II.3.2.1 for straight tubes

- **Appendix 8.3:** update of the appendix, correction of the classification of FM 1568 and addition of MSs from RCC-M 2020.

All users of the RSE-M Code may submit modification or interpretation requests by completing the forms available on [www.afcen.com](http://www.afcen.com). Once completed, these forms may be sent electronically via the site [www.afcen.com](http://www.afcen.com), by mail or [rse-m@afcen.com](mailto:rse-m@afcen.com) or by post to the Technical Secretariat (Secrétaire Technique RSE-M, EDF-UTO, 3 rue de la Galmy – Immeuble Antares 77700 Chessy), which will pass these on to the authors. A reply will be sent to the requestor in all cases.