

TG7 - FITNESS for SERVICE (FFS) - Risk based Inspection (RBI)

EPERC TG7 Potential Technical Program

(to be associated with TG7 1st meeting minutes on EPERC website)

General Introduction

4 major degradations:	cracks	thinning-pitting	excessive deformation/buckling	loss of material properties (ageing)
4 major steps	understanding root causes and mechanisms	degradation rate	- maximum allowable degradation - leak before break	repair technologies and consequences
WP 1: Existing International Codes & Standards	review/comparison of International Codes and Rules	gaps & needs, including new needs associated to innovative industries		
WP2: R&D program	Crack analyses	- K, J, C* handbook - crack growth / plasticity effects / mean stress / threshold / environment effects - critical crack size - cladding consequences - defect interaction - creep consequences		
	Residual stresses	- manufacturing - welding - repairs		
	Leak Before Break	- Crack growth rate/shape - TWC critical size - Crack Opening Area		Step by step Procedure
	Thinning - Pitting analyses	- thinning rate - allowable thinning rules		
	Loss of material properties	- rate - consequences		- due to environment - thermal ageing consequences - other types of ageing - $da/dN - \Delta K$ or DJ - $J\Delta a$ curves - $da/dt - C^*$ - thinning rate - stress-strain curves - thermal ageing consequences
	All needed material properties			
	Overload and Buckling			
WP3: Surveillance program and ISI	techniques for surveillance of key parameters	ISI optimisation	techniques, performance, frequency	
	Risk Based Inspection development and Final Validated Guide			
WP4: Benchmarks on practical cases	definition	performances	synthesis	
WP5: TG7 Synthesis	All task and WP synthesis	Final Best Practices Report	Code Case proposal to European Standards	
WP6: Large Knowledge Transfert	Workshop - Training - International Conferences			
WP7: Road Map management	Regularly up-dated with all TG7 actions			
FFS International Codes & Standards	ASME BPVC Section XI, RSEM/RCC-MRx, R5-R6, API-ASME, FITNET, BS 7910, JSME, KEPIC, VERLIFE...			
RBI International Codes & Standards	ASME BPVC Sec XI Code Cases/Division 2 RIM, API 581, RIMAP, ENIQ, TWI, JSME, EN16991 ...			