

Resolution of comments received about the Technical Specification

In the following tables, green boxes indicate that the comment has led to a modification of the TS.

N°	Section number	Comment	Resolution
Comments from Joint Project – Nuclear Risk & Public Control			
1	00.1	In the glossary it should be explained that the phrase “ <i>areas of improvement</i> ” means that there are deficits in these areas.	According to other comments : “areas for improvement” has been replaced by “weaknesses”
2	00.3	The term “ <i>fire resistant</i> ” has to be explained. Does this mean resistance to a fire of 800°C for 30 minutes?	The term "fire resistant" refers to fire resistance properties whose characteristics (duration, temperature) must be specified. No modification of the TS.
3	00.3	“ <i>The NAR will: present the national selection of facilities,</i> ” Since the requirements for fire protection have been increased over the years, in particular the passive fire protection is higher in newer installations. Therefore, the technical specifications should ensure that older facilities are selected for the National reports in order to achieve the intended goals of the TPR.	Annex 4 presents the selection process to draw the list of installations to be included in the NAR. No modification of the TS.
4	00.4	“ <i>While the SRLs are considered as a framework for the TPR, the TPR is not meant to be a compliance check to SRLs.</i> ” However, the NAR should state whether the RLs are fulfilled or when they will be fulfilled.	The purpose of the TPR is not a compliance check to the SRLs. No modification of the TS.

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5	00.5	<p><i>"Each participating country will prepare its NAR in English."</i> However, to reach the goal of transparency there should also be a Non-technical Summary, like in EIA Reports, and this Non- technical Summary should be also published in the language of the country.</p>	<p>It was not the case for TPR I. It's up to ENSREG, the EC or participating countries to decide. <i>No modification of the TS.</i></p>
6	01.1	<p><i>"Scheduled end of operation date (if any)."</i> It should be also mentioned if a lifetime extension is envisaged.</p>	<p>"scheduled end of operation date" encompasses a lifetime extension, if any. <i>No modification of the TS.</i></p>
7	01.2	<p><i>"The NAR should describe how international standards are used in developing the overall firesafety programme including:</i> <i>-relevant WENRA Safety Reference Levels (SRLs),</i> <i>- IAEA Safety Standards and other guidance, including the proven practices. "</i> The NAR should not only mention how these international standards are used in general but also which of these standards are already used for the specific facilities (e.g. in the framework of an PSR).</p>	<p>Accepted. <i>TS modified as follows: " The NAR should describe which and how international safety standards are used in developing the overall fire safety programme including [...]"</i></p>

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8	01.3	<p><i>"In order to assess the suitability, effectiveness and reliability of fire protection means, operational experience feedback and other experience should be considered."</i> This should also include events/failures per year of the fire protection equipment during the previous operation.</p>	<p>Already included : "lessons learned from internal and external events" <i>No modification of the TS.</i></p>
9	01.4	<p><i>"eliminating combustible materials and potential ignition sources to the extent practicable". "In line with the concept of defence in depth, protection against fire is provided in general by ensuring the high quality and reliability of SSCs, .."</i>. A particularly large fire load in nuclear power plants is the cable insulation of the power supply cables. Therefore, special attention should be paid to the quantity and type of material, and these should be presented.</p>	<p>Cable insulation is covered by fire safety analyses. No need to specify it. <i>No modification of the TS.</i></p>
10	01.4.4	<p><i>"IAEA SSR-4 [12], para 6.163 requires that internal fires shall not challenge redundant safety groups."</i> The NAR should explain in which areas this requirement is not fulfilled.</p>	<p>Already addressed in section 01.4.5: 'It is expected that a brief general description on how the defence in depth principles (i.e. in the WENRA SRLs) as presented in this section are met in each nuclear installation. Section 03 of the NAR should describe how the defence in depth concept has been implemented with respect to fire safety in the nuclear installations, and that the impact of fire across the levels of defence in depth has been adequately considered.' <i>No modification of the TS.</i></p>
11	02	<p><i>"However, in this context, it is important to note that IAEA SSR-4 [12], requirement 20 applies."</i> The NAR should explain in which areas this requirement is not fulfilled.</p>	<p>Accepted. <i>TS modified as follows:"</i></p> <ul style="list-style-type: none"> - <i>"fire safety objectives [...]"</i> - <i>main results of the FHA with regard to the safety objectives"</i> <p><i>have been added to the list of information requested in the NAR.</i></p>
12	02	<p>It is not clear in the Technical Specifications whether the hazard of external fires is also evaluated.</p>	<p>External fires are not in the scope. SRLs quoted in the TS belong to "internal hazards" sections of Wenra SRLs. <i>No modification of the TS.</i></p>

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13	02	In addition, the danger of a fire caused by an aircraft crash should also be considered. The NAR should state whether such investigations have been carried out. It should be also mentioned whether a crash of sport plane, a military aircraft or passenger aircraft have been considered.	External fires are not in the scope. SRLs quoted in the TS belong to “internal hazards” sections of Wenra SRLs. No modification of the TS.
14	02.1	<i>“For nuclear power plants the focus should be on deterministic analyses in the TPR, but PSA should be covered at a general level.”</i> However, the NAR should provide the calculated results of the PSA 1 and the contribution of fire events for the results of the PSA 2.	Already requested by: ‘the main results of the Fire PSA: - the most important accident sequences, - the contribution of the fire events to the overall PSA results.’ No modification of the TS.
15	02.1	It should be explained which assumption are made for design basis accidents. (see WENRA RL E 6.1).	- Already addressed by: ‘assumptions and methodologies applied to perform the analysis’ No modification of the TS.
16	02.1	In addition, results/consequences of beyond-design-basis fires should be presented.	The relevant item for TPR II, e.g. item which allow a benchmarking, is already addressed by: “ event combinations (e.g. seismic events) considered in the analysis, including the rules and/or criteria applied to consider such event combinations”. No modification of the TS.
17	02.2	It should be explained which assumption are made for design basis accidents. (see WENRA RL E 6.1).	Already addressed : ‘assumptions and methodologies applied to perform the analysis’ No modification of the TS.
18	02.2	In addition, results/consequences of beyond-design-basis fires should be presented.	The relevant item for TPR II, e.g. item which allow a benchmarking, is already addressed by: “ event combinations (e.g. seismic events) considered in the analysis, including the rules and/or criteria applied to consider such event combinations”. No modification of the TS.

N°	Section number	Comment	Resolution
19	02.3	It should be explained which assumption are made for design basis accidents. (see WENRA RL E 6.1).	Already addressed : ‘assumptions and methodologies applied to perform the analysis’ No modification of the TS.
20	02.3	In addition, results/consequences of beyond-design-basis fires should be presented.	Same as §02.1 and §02.2. No modification of the TS.
21	02.4	<i>“In case of dry spent fuel storage facilities safety is provided by passive systems such as the storage casks qualified to fire.”</i> It should be presented in the NAR against which fire values (duration of fire and temperature of fire) the casks are qualified.	Already addressed in § 3.1 “fire prevention”. No modification of the TS.
22	02.3	Since a fire involving uranium hexafluoride is a particular health hazard, it should be presented in which facilities uranium hexafluoride is available and what are the possible consequences.	TPR is focused on nuclear safety. Other aspects of fire safety are not included. No modification of the TS.
23	02.5	<i>“The fire safety analyses for such facilities are not required to be unduly sophisticated unless stored waste / waste packages as such are flammable.”</i> For each waste storage facility, the amount of untreated flammable waste should be provided.	Already addressed in section 1.1 and/or in section 2 (hypothesis for FHA). No modification of the TS.
24	02.5	<i>“assessment of radiological impact following a postulated fire event and the adequacy of the performance levels in relation to the safety and radiological objectives,”</i> This assessment should also include beyond design basis accidents.	The relevant item for TPR II, e.g. item which allow a benchmarking, is already addressed by: “event combinations (e.g. seismic events) considered in the analysis, including the rules and/or criteria applied to consider such event combinations”. No modification of the TS.

N°	Section number	Comment	Resolution
25	02.6	<p><i>“The fire safety analyses for such facilities are therefore not required to be unduly sophisticated unless highly contaminated parts or flammable waste in temporary storage are involved.”</i> For each facility, the amount of untreated flammable waste should be provided.</p>	<p>Already addressed in section 1.1 and/or in section 2 (hypothesis for FHA). No modification of the TS.</p>
26	2.7	<p><i>“Lessons learnt from events, reviews, OSART, INSARR and/or equivalent should be presented.”</i> This important chapter should contain more requirements. It should be explicitly stated what should be included in this chapter, e.g. a list of events, especially those that were not included in the FHA, recommendation of the OSART mission, etc.</p>	<p>The “and/or equivalent” allows to collect any source of feedback. No modification of the TS.</p>
27	2.8	<p><i>“The conclusions on the adequacy of the licensee’s fire safety analyses should be presented.”</i> It should be explicitly listed in which issues the regulator see a lack of adequacy of the licensee’s fire safety analyses.</p>	<p>No modification of the TS.</p>
28	03.1	<p>A typical cause of internal fires in NPPs is a short circuit in an electrical component or a failure in ageing cable insulation. It should be explained how these kinds of fires are prevented. Also, it should be mentioned if these kinds of fires have already occurred in the facility. The risk of fire is in general increasing when ageing effects of the NPP are increasing. This fact should be considered in the NAR.</p>	<p>Ignition sources such as short circuit in an electrical component are part of the FHA and considered in PSAs. See section 2. No modification of the TS.</p>

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29	03.2.2	The stress test had shown that in many old NPPs the fire extinguishing systems were not designed against earthquakes. The NAR should show for all facilities whether the fire extinguishing systems are designed against earthquakes.	Should be addressed by the study of combination of events. See section 2. <i>No modification of the TS.</i>
30	03.3.1	Regarding the prevention of fire spreading, there are two important issues missing in the technical specifications: -1) spatial separation of redundant safety systems, which is important for the fire hazard 2) the material and separation of cables for power supply and controlling which also is an important issue for the fire hazard.	TS lists information required in the NAR to describe the means for the prevention of fire spreading. These points are covered : - spatial separation of redundant safety systems is addressed in FHA - cables fire resistance and separation of cables are considered in FHA and/or PSA (common failure...) <i>No modification of the TS.</i>
31	3.4	<i>“Lessons learnt from events, reviews, OSART, INSARR and/or equivalent should be presented.”</i> This important chapter should contain more requirements. It should be explicitly stated what should be included in this chapter, e.g. a list of events/failure of fire detection and alarm components, fire extinguish systems, fire barriers, ventilations systems, especially those that were not included in the FHA, recommendation of the OSART mission, etc.	The “and/or equivalent” allows to collect any source of feedback. <i>No modification of the TS.</i>
32	3.5	<i>“The conclusions on the adequacy of the licensee’s fire safety protection concept should be presented.”</i> It should be explicitly listed in which issues the regulator sees a lack of adequacy of the licensee’s fire protection concept.	<i>No modification of the TS.</i>

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33	04	<p><i>"This should identify areas for improvement or potential good practices..."</i> The sentence should change to: This should identify areas for improvement (i.e. deficits) or potential good practices...</p>	<p>"Areas for improvements" have been turned into "weaknesses".</p>