DS560 Draft DPP for the Safety Guide on Development and Application of Level 3 Probabilistic Safety Assessment for Nuclear Power Plants, STEP 3

Comm.	Country	No.	Para/ Line No.	Proposed new text	Reason	Accepted	Accepted, but modified as follows	Rejected	Reason for modification/rejection
NUSSC	Finland	1	General	No comments	FINLAND have no comments to the draft document. Document corresponds FINLAND current national practice on PSR.	X			
NUSSC	France	1	General	The DPP proposes a L3 PSA guideline to complete SSG3 and SSG4 for L1 and L2 PSA but: there is no requirement for the development of L3 PSA in the IAEA standards and no harmonized domestic requirement worldwide, the status of L3 PSA cannot be compared to L1 and L2 PSA: not a common practice between Members States, and limited exchanges available to identify best-practices. A common understanding of the scope and applications of L3 PSA should be obtained between Members States before deciding the development of a guide. An intermediate step (limited) would be beneficial to ensure that L3 PSA guideline project will be successful (Tecdoc, safety report…). It will be helpful to adapt the complexity of a L3 PSA to its application.				X	It is agreed that the TECDOC or Safety Report typically serve as a starting point to create a basis for the Safety Guide. In this particular case the IAEA has a 50-P-12 document which provides a systematic methodology on Level 3 PSA. This document 50-P-12 is not superseded like it was done for the documents 50-P-4 (Level 1 PSA), 50-P-8 (Level 2 PSA) and 50-P-10 (Human Reliability). Even though the 50-P-12 document is reliatively old (1996), the recent workshops on Level 3 PSA (2 WS in 2019 and 1 in 2023 – see also the response to WNA comment #1) allowed to conclude that the methodological aspects reflected there are still applicable, did not change over time and are still being applied. Moreover, based on the Level 3 PSA related recent events (see response to WNA comment #1) the new TECDOC on PSA approaches was developed which includes an up-to date information and details on Level 3 PSA. This TECDOC is currently moving through the publication process. So based on: - above mentioned publications - discussions during the dedicated Level 3 PSA workshops - international developments (e.g. results of the NEA work, ASME/ANS PRA standard) - use of PSA for NWCRs (e.g. for HTGR) the IAEA position is that we have a sufficient basis to support the development of the Guide. Kindly also refer to IAEA's responses to general comments from ENISS and WNA.

NUSSC	Saudi Arabia	1	General	Please consider adding RASSC to the list of review committees.	Level 3 PSA radiological consequences' calculations entail the involvement of RASSC.			X	Based on internal discussion during the Step 2 of this Guide, it was agreed with the coordinators of RASSC and WASSC that the Guide will go to WASSC which will allow to address relevant interfaces with relevant Safety Standards. This was a decision made during the Step 2 with thorough discussion of WASSC and RASSC representatives.
NUSSC	Saudi Arabia	2	General	Please change 'Fukushima accident' in 'Fukushima Dai-ichi accident'.	Only Fukushima Dai-ichi experienced the accident to the level to be considered in this specific safety guide.	X			
NUSSC	WNA	1	General	Guidance for performing PSA level 3 is actually missing. Though this lack of guidance is not impeding the development of SMR and NWCR as the safety demonstration generally does not need to rely on PSA level 3, even for NWCR. Therefore the actual need of guidance is questionable and considering the huge work already planned to update the existing set of IAEA guides, one may wonder if this should be considered as a priority. Besides, as mentioned in the draft DPP, the guide possible content should rely on MS experience and good practices. This experience seems to be rather limited right now and it could be feared that the guidance would only reflect the practices in some very few countries where it is applied and would not reflect a general consensus. As a guide is meant to be a consensus document and the conditions to reach such consensus are not met now, also as the need for this guide is not obvious either, it seems premature to launch this work. We recommend that the timing for this work should be rediscussed during next NUSSC meeting.				X	Agree with the point that the Guide is missing. Also agree with the point that the Level 3 PSA is not the only tool for a given task. In fact the development of the Guide was requested by 52nd NUSSC in 2021 and the priority was given accordingly. Regarding the experience: in the recent years the IAEA had also implemented number of activities on Level 3 PSA, e.g., Technical Meeting in 2012 (Vienna), workshops in 2013 (Warsaw), 2019 (Petten), 2019 (Budapest), 2023 (Yerevan). Also, there were significant developments in worldwide (e.g. NEA status report, ASME/ANS PRA standard on Level 3 PSA)/ The results from all of these activities concluded that the methodological approach of Level 3 PSA is quite harmonized and there is a practical experience which could serve as a strong technical basis for the development of the Guide.

NUSSC	ENISS		**General GC1**	**More in-depth discussion is needed between Member States in the frame of the NUSSC as it would be unwise to spend resources to develop a Safety Guide without a shared understanding of the associated objectives and actual feasibility** There has been a lack of visibility in the IAEA plan regarding this safety guide project in the past years, and there has not been an open debate amongst the MS in the NUSSC. The main question to be debated is whether a document at the level of a Safety Guide is needed in the proposed timeframe, and if not what is the best way forward to meet the needs. It had been noted that the NUSSC supported the preparation of a DPP for a Level 3 Safety Guide at its meeting in Nov.2021. However this was not backed by an in-depth discussion and it is our recollection that it was agreed that the DPP would trigger this in-depth discussion when submitted, if needed. Since then there had been no certainty provided by IAEA on a rough time schedule, and the creation of this Safety Guide was not part of the Medium-Term survey of 2024, and it was not part of the work plan discussed in the Nov.2024 meeting. No clear information was given on this draft DPP to be submitted to the June 2025 NUSSC.			X	**After the NUSSC decision in November 2021 to request Secretariat the development of a DPP** the preparation of the Safety Guide on Level 3 PSA was always mentioned by the Secretariat when discussing the next 10-year vision regarding the Safety Standards on design safety and Safety Assessment. The vision with detailed timing was presented by SAS representatives to the CSS and NUSSC members. When presenting the 10-year vision on Design safety and Safety Assessment Safety Standards, the detailed proposed timeline was always presented and there was never a comment from the committee members regarding the timeline (see for instance the NSNI 10-years vision materials regarding the Discussion on Medium-Term Plan at NUSSC58). According with the timeline presented by SAS the Step 3 for the Safety Guide was always planned for Q2 2025.

NUSSC	ENISS		**General GC2**	**So far there has been no consensus justifying an IAEA position to recommend the application of Level 3 PSA. Hence how could there be a document giving recommendations on an approach that is not required or even recommended**? Level 1 and Level 2 PSA are generally required (clearly the case in many national regulatory frameworks / See also WENRA Safety Reference Level O1.1 "For each plant design, a specific PSA shall be developed for level 1 and level 2…"). It can be noted that meeting the probabilistic safety analysis expectations in SSR-2/1 Rev.1 have been included having in mind Level 1 and Level 2 PSA, without anything calling for Level 3 PSA. Logically there are Level 1 PSA and Level 2 PSA guides with recommendations. It does not seem that Member States have concluded on a consensual recommendation that Level 3 PSA should be developed and applied. A condition for publishing a Level 3 PSA safety guide would be that Level 3 PSA be recommended. Otherwise, the IAEA would be in a position of providing recommendations on the application of an approach that is not recommended.			X	While GSR Part 3 and GSG-10 do not use the term "Level 3 PSA" explicitly, they contain requirements and guidance for assessing potential exposure, applying the principle of optimization of protection and safety, and estimating radiological consequences, which are precisely the scope of PSA Level 3. GSG-10 includes specific provisions for the assessment of potential exposure (paras 5.43–5.75), using risk criteria that correspond to PSA Level 3 methods, even though that term is not used directly. GSR Part 3, notably paras 3.23–3.24 under Requirement 6, establishes the obligation to assess risks associated with potential exposures — directly consistent with PSA Level 3 objectives. GSR Part 3 states consequences and likelihood of accident releases need to be assessed. We think that the choice is not binary between recommending doing something and recommending that it is not done. Moreover, Level 3 PSA is clearly envisaged in GSG-10 para. 5.45. In addition, the existing PSA Safety Guides (SSG-3(Rev.1) and DS528(new revision of SSG-4) were always (since 2010 when they were first time published) referring to the PSA framework as consisting of three levels. Two of which are properly covered by IAEA standards, but Level 3 is not covered. IAEA Safety Fundamentals (SF-1) identify the fundamental safety objective as the protection of people and the environment from harmful effects of ionizing radiation. PSA Level 3 directly supports this objective by assessing off-site consequences and risks to the public. Thus, PSA Level 3 provides a practical means of implementing requirements already present in the Safety Standards, particularly those related to potential exposure scenarios and the prospective demonstration of safety (of course there is no intention to present it as an only tool). The recent Consultancy Meeting on consideration of potential exposures to the public and the environment in the context of small modular reactor (SMR) projects

								(14-17 April 2025) reaffirmed the technical foundation and practical utility of PSA Level 3 applications, reflecting broad interest and participation by IAEA Member States, including regulatory bodies and technical support organizations.
NUSSC	ENISS		**General GC3**	**The practice so far has shown that Level 3 PSA were not needed (excepted a very few practices worldwide), therefore a Safety Guide on Level 3 PSA is not relevant (at this stage).** For several decades, Level 2 PSA have been developed worldwide to assess the risks of abnormal releases. The insights of these PSA have demonstrated the control of risks to populations and the environment. Up to now, Level 3 PSA have not been needed in the vast majority of countries and there has never been any kind of widely shared view that there was a gap to fill in. Licensees and Regulators have been able to make sound decisions without Level 3 PSA. What is new today which would justify the need of using Level 3 PSA? Level 3 PSA are just a post-processing of the endpoints of the Level 2 PSA (and possibly some L1 PSA ones where the three barriers have not fulfilled their role or only partially). Level 3 PSA are not needed to identify potential safety improvements in the NPP designs and operations.			X	This argument overlooks the practical experience in multiple Member States — including those where PSA Level 3 is applied or expected (UK, Netherlands, USA, Argentina, South Africa, Australia) — where it has become a valuable input to the demonstration of safety, emergency preparedness and response, authorization processes, and public communication, particularly in the context of small modular reactors (SMRs) and other advanced reactor designs. Surely, this is the stage when it is needed when the practice is starting to be adopted more worldwide. Level 3 PSA has been used for instance in China for the purposes of safety assessment of HTGR reactor with TRISO fuel. Also limited Level 3 PSA type of analysis (Level 2+) is required by Russian national regulation. This kind of limited analyses are not covered by SSG-4 and the intend is to highlight in a new Level 3 PSA guide, that Level 3 PSA does not need to be a complex and detailed analysis, also a limited scope might be sufficient for certain applications, depending on the objectives of using it. Level 2 PSA clearly cannot fully assess the risks to the population or the environment since no details of the environment are input. Level 3 PSA is not considered to be just a post-processing of the L2 or L1 endpoints, as different results are obtained for the same technology at different sites.

NUSSC	ENISS		**General GC4**	**A Safety Guide on Level 3 PSA is not relevant (at this stage) because Level 3 PSA uncertainties are complex to address.** In order to know if Level 3 PSA can be useful, difficulties in the interpretations of L3 PSA results have to be carefully considered, as well as the potential consequences of wrong interpretations, especially by non-specialists (probabilistic analyses, radiological consequences…). Epistemic and stochastic uncertainties in results from Level 3 PSA, carrying uncertainties at all levels, also from Level 1 and Level 2 PSA, may disqualify the Level 3 PSA. The difficulties of addressing uncertainties in L3 PSA was discussed during the last Workshop on uncertainties organized in Madrid in April 2025 by the NEA/CSNI WGRISK. This consideration is the subject of R&D work, and there are currently no proven methods to justify that this treatment can be deployed industrially soon. Level 3 PSA computational results are thus heavily uncertain and remain complex metrics to be used in decision-making process.			X	All levels of PSA — including Level 1 and Level 2 — involve uncertainties and evaluate them systematically. The established methodology of Level 3 PSA also allows to systematically evaluate uncertainties in off-site consequences, using well-established models and methods to support decision-making. Computational tools such as **MACCS**, **PACE**, and **COSYMA** include mechanisms for treating uncertainty, such as probabilistic meteorological sampling, parameter sensitivity analysis, and scenario-based consequence modeling. **Uncertainties in source terms**, atmospheric dispersion, and dose-effect relationships are real but tractable, and these have long been incorporated into **emergency preparedness and response** planning and **environmental impact assessments**. The NEA/WGRISK PSA Level 3 Benchmark confirms variability based on assumptions — but this is precisely why Guide on this matter is considered to be useful: to promote **consistency in approach**, **transparency in assumptions**, and **clarity in communication** of results. In addition, Level 2 PSA also includes large uncertainties (especially regarding the severe accident phenomenology), perhaps even larger than in Level 3 PSA. However, the Guide on Level 2 PSA is developed and considered to be useful for the practitioners and interested parties.

NUSSC	ENISS		**General GC5**	**A Safety Guide on Level 3 PSA is not relevant (at this stage) because Level 3 PSA is an uncommon practice and there is a large variety of models.** Publications on Level 3 PSA and exchanges in the frame of the NEA/CSNI/WGRISK have been considered in addition to the European members' feedback. In Europe the only countries where Level 3 PSA is needed to demonstrate compliance with expectations and requirements are the UK and the Netherlands respectively. In the UK: Level 3 PSA is needed to analyse how the safety performance compares to numerical targets part of the ONR Safety Assessment Principles (SAPs). For instance target 9 (societal risk) corresponds to the frequency of occurrence of more than 100 fatalities, immediate or latent. There are two frequency values: a Basic Safety Limit frequency of 10^{-5} /y/r and a Basic Safety Objective of 10^{-7} /y/r. In the Netherlands there are a prescriptive probabilistic requirement in the Decree on Nuclear Facilities, Fissionable Materials and Ores Decree (Bkse): "A licence to establish, put into operation, maintain in operation or change a facility in which nuclear energy can be released may be refused if the values in the risk analysis performed pursuant to article 6 (1) (i) exceed one of the following values: a) a probability of 10^{-6} per year that an unprotected person permanently present outside the relevant facility will die as a result of a beyond-design-basis accident; [individual risk] b) a probability of 10^{-5} times per year that a group of at least ten persons present outside the relevant facility will be direct fatalities of a beyond-design-basis accident, or a probability of n^2 times smaller for n times more direct fatalities". [societal risk] There is no reference to Level 3 PSA neither in the WENRA Safety Reference Levels nor in other WENRA reports. To the ENISS members' knowledge no other regulator in Europe is considering future requests to the licensees or future licensees to complete Level 3 PSA (maybe one exception: it was noted that the recently updated Slovenian regulatory document "Rules on Radiation and Nuclear Safety Factors - JV5" requires L1, L2 and L3 PSA to be developed, but it seems that there is not any use of L3 PSA mentioned and no associated criteria in the regulations). However, there may be expectations from regulators to quantify the radionuclide releases from L2 PSA endpoints within this typical range: quantified radiological source terms, elementary dose calculation at specific distances using fixed dispersion coefficients, calculations of doses at specific points in the plant vicinity which factor the statistical variability of meteorological conditions linked. Generally, these types of quantifications or prolongations of Level 2 PSA are not called Level 3 PSA or do not correspond to the usual L3 PSA definition. A benchmark is on-going in the frame of NEA/CSNI/WGRISK, focusing on the Level 3 only. The case studied in the WGRISK PSA3 Benchmark corresponds to a severe accident release based on LWR source term of XE133, I131 and CS137, 20 m stack release, with 12 meteorological sequences. The requested outcome are concentrations and deposition, dose per pathways, stochastic and deterministic Risk. In general there is a decent agreement regarding atmospheric dispersion outcomes. However results are highly dependent on stability of the weather. There is a high variance regarding ground shine and ingestion dose. This variance leads to large variations on the risk itself, which is a product of many different sub-outcomes (atmospheric dispersion, dose assessment, dose-risk relation model).			X	Limited use of PSA Level 3 in past decades does not imply limited value going forward. Several factors now strongly support its broader application: SMRs and other advanced reactor designs introduce new siting conditions and deployment scenarios (urban, remote, marine) that require consequence modeling to ensure protective measures are appropriate and justified. PSA Level 3 is not merely an extension of Level 2 — it is an essential tool for evaluating consequences, implementing risk constraints, and achieving prospective safety assessment objectives under IAEA Safety Standards. The fact that the results are highly dependent on the stability of the weather is why Level 3 PSA could be useful and is needed and this type of aleatory uncertainty is addressed with the meteorological sampling. The statement that there is high variance with ground shine and ingestion dose is also true for the analysis of routine discharges or any radiological consequence analysis and this practice is widespread. GSR Part 3 Requirement 9 states: *Requirement 9: Responsibilities of registrants and licensees in planned exposure situations* *Registrants and licensees shall be responsible for protection and safety in planned exposure situations.* *3.15. Registrants and licensees:* *…* *(e) Shall assess the likelihood and magnitude of potential exposures, their likely consequences and the number of individuals who may be affected by them;* The magnitude of the impact depends on the site and the meteorological conditions there. If a release happens when the wind is blowing out to sea at a coastal site then the impact could negligible; the same

				In conclusion, even if the overall methodology seems the same for Level 3 PSA, results may vary since: Some modelling parts and assumptions are correlated to the regulations of the country. These parts are most of the time hard-wired in the PSA3 codes which leads to as many calculation codes as there are countries involved in such a PSA. There is a large variation in the way dose is calculated and the probabilistic dose-risk model. As a result, there is a large variety of risk evaluation depending on previous assumptions or hypothesis. Regarding Level 3 PSA, given the differences mentioned above, the great variability between the results of the various approaches does not allow for the definition of a common usage base.				release with wind blowing inland towards populated areas would have a very different impact. The tolerability of the impact for a particular reactor technology may be very different at different sites – for example one with the prevailing wind blowing towards the nearest population centre and one with it blowing away. This cannot be done by simply looking at the CDF, LRF/LERF, or the deterministic dose at the site boundary assuming a contact wind direction towards the assumed receptor. These may all be useful metrics in assessing the safety and acceptability of the design but are not sufficient for determining the acceptability of a given reactor technology at a particular site. To fully address item (e) of GSR Part 3 Requirement 9 for potential exposure conditions (accidental releases) in planned exposure situations, the meteorological conditions and location and habits of the exposed population must all be taken into account and these all affect the likelihood and magnitude of such potential exposures. In this context the Level 3 PSA is considered to be an important tool, which could be applied.

NUSSC	ENISS		**General GC6**	**What could be a reasonable way forward?** Available IAEA Level 3 PSA related documents: 1996 Safety Report Series No. 50-P-12 2012 Technical Meeting (TM) on Level 3 Probabilistic Safety Assessment. The DPP says the Working Material (Rev. 0) Output of the IAEA Technical Meeting on Level 3 Probabilistic Safety Assessment held in July 2-6, 2012, was published, but it could not be found from a web search. 2023 Safety Report No.123: Extract: *4.11.3.2. Areas of non-applicability* *The following areas of non-applicability were identified:* *(a) Review of section 2 of SSG-3 [90] indicates that the consideration of various PSA end states (e.g. core damage for Level 1 PSA) may not be applicable to all EID (Evolutionary and Innovative Designs) technologies (see paras 2.2–2.4 of SSG-3). The recommendations in SSG-3 imply calculation of the core damage frequency. Therefore, the PSA studies for EIDs that directly go to Level 3 end states (without quantifying Level 1, Level 2 or both end states) are not in line with SSG-3 in this respect. Nevertheless, the recommendations provided in SSG-3 could be used for supporting the development of PSA models that go directly to Level 3 end states (e.g. for most of the PSA elements, such as initiating events analysis, system reliability analysis, data analysis, CCF analysis, human reliability analysis). When referring to the safety goals and criteria in section 2 of SSG-3 (see paras 2.10–2.20), however, the discussion of the Level 1 metrics (i.e. core damage frequency) may not be applicable to EIDs for which core damage may not be meaningful, such as HTGRs.* This let the reader think that for some technologies the solution would be to develop PSA that would directly provide the "Level 3 end states" and that it would be the way to respond to the need. For us this shows a lack of understanding (or at least there is a lack of common understanding). It is well understood that Level 1 and Level 2 would not be differentiated with the capability to provide release categories (and their representative source terms) with associated frequencies. There would be a single level instead the usual L1 and L2: the probabilistic containment or release analysis. It would be a much better use of IAEA resources to update the Safety Series No. 50-P-12, which is about 30 years old or to produce a dedicated TECDOC. It should be the opportunity to address questions regarding the potential uses of common interest (e.g. for siting purposes, optimisation of public and environment protection, in emergency design/planning stage and actual response in a real accident situation). The public communication issue should also be carefully addressed. Those questions should be addressed pragmatically, accounting for feasibility and validity issues, the real added values, possibly with an extended definition of what a Level 3 PSA could be. We must ensure that any development provides an added value commensurate with the resources to be deployed. Difficulties in the interpretations of the results also have to be considered with adequate treatment of the large uncertainties, as well as the potential consequences of wrong interpretations, especially by non-specialists (probabilistic analyses, radiological consequences…). A pragmatic and sufficient approach could still be the evaluation of risk surrogates as done so far. It could also be sufficient for new technology and specific site configurations. It could also account for inputs from the on-going work in the frame of NEA/CSNI/WGRISK which will be the most recent benchmark. This safety report or TECDOC could also examine the similar approaches, if any, applied to other anthropic sources of immediate or long term risks, from industrial			X	It is agreed that the TECDOC or Safety Report typically serve as a starting point to create a basis for the Safety Guide. In this particular case the IAEA has a 50-P-12 document which provides a systematic methodology on Level 3 PSA. This document 50-P-12 is not superseded like it was done for the documents 50-P-4 (Level 1 PSA), 50-P-8 (Level 2 PSA) and 50-P-10 (Human Reliability). Even though the 50-P-12 document is reliatively old (1996), the recent workshops on Level 3 PSA (2 WS in 2019 and 1 in 2023 – see also the response to WNA comment #1) allowed to conclude that the methodological aspects reflected there are still applicable, did not change over time and are still being applied. Moreover, based on the Level 3 PSA related recent events (see response to WNA comment #1) the new TECDOC on PSA approaches was developed which includes an up-to date information and details on Level 3 PSA. This TECDOC is currently moving through the publication process. So based on: - above mentioned publications - discussions during the dedicated Level 3 PSA workshops - international developments (e.g. results of the NEA work, ASME/ANS PRA standard) - use of PSA for NWCRs (e.g. for HTGR) the IAEA position is that we have a sufficient basis to support the development of the Guide.

				installations, intensive agriculture, fossil fuel combustion, or natural sources of risk like extremely hazardous events. A complementary way forward could be to develop a TECDOC to address the needs which are specific to new technologies which would then be the major input for the revision of SSG-3 and SSG-4. A key question is first about adapting the metrics for some of the new technologies, before making the assumption that Level 3 PSA is the only adequate approach.				
NUSSC	ENISS		**General GC7**	**Need to work on the definition of Level 3 PSA to be inclusive of all the relevant probabilistic analyses either complementary to the usual Level 2 PSA results/metrics or supporting evaluations decoupled from Level 1 and Level 2 PSA** Usual definition: a Level 3 PSA calculates risk estimates related to the public health and other radiological consequences like contamination of land or food as well as economical effect (e.g. radiation doses, health effects, contaminated areas, associated economic costs) due to accidents at NPPs. Extract from the IAEA Glossary 2022: *Three levels of probabilistic safety assessment are generally recognized:* *Level 1 comprises the assessment of failures leading to determination of the frequency of fuel damage.* *Level 2 includes the assessment of containment response, leading, together with Level 1 results, to the determination of frequencies of failure of the containment and release to the environment of a given percentage of the reactor core's inventory of radionuclides.* *Level 3 includes the assessment of off-site consequences, leading, together with the results of Level 2 analysis, to estimates of public risks.* It seems that experts from the PSA ecosystem have continuously presented the three level PSA framework for NPPs as a common and established system which would be able to provide risk results easily usable by decision makers and understandable by non-specialists and even the public, without proper justifications. This is a theoretical vision which needs to be evaluated in the light of concrete goals and the actual potential for providing added value. For example one can find in the Background section of the DPP: *"A Level 3 PSA is directly aimed at assessing the risk for people and the environment from nuclear installations, and therefore constitutes an important tool to be used in achieving compliance with the fundamental safety objective "to protect people and the environment from harmful effects of ionizing radiation" as the IAEA Fundamental Safety Principles, Safety Fundamentals No. SF-1 states".* This is an over-simplistic statement. In the frame of the development of a new TECDOC or a Safety Report on Level 3 PSA, there should be an agreement on a definition of Level 3 PSA with a link to meaningful and useful applications, with a wide range of scope and depth, and diverse expectations whether they are to be developed by the Authorities or the Licensees / Licence Applicants or the Designers. A more inclusive terminology could be introduced by using the wording "Probabilistic Consequence Analysis" instead of "Level 3 PSA".		X At this stage the term "PSA Level 3" is defined in the IAEA Safety Glossary (2022) and used in IAEA publications such as SSG-3, SSG-4, and referenced in GSG-10. While broader terms like "probabilistic consequence analysis" exist, "PSA Level 3". However, we agree that this comment need to be properly considered and systematically addressed during the developed of the Safety Guide to avoid any misinterpretation. One important point is to highlight in the Guide different types of analysis which could be done under Level 3 PSA, from limited to very detailed ones.		

WASSC	Korea	1	Section 2 Page 1 Line 13	The following is suggested. (before) ~~ other radiological consequences (e.g., contamination of land or food) ~~~ (after) ~~~ other societal consequences (e.g., contamination of land or food) ~~~	I think that it is better to replace with societal according to IAEA SSG-3 (Rev.1) para. 1.4 (c).	X			
NUSSC	France	2	Section 2	Level 3 PSA represents the final level of assessment, focusing on the radiological consequences attributable to individual and societal risk (e.g. radiation doses, health effects, contaminated areas, evacuation zones, associated economic costs) due to accidents at NPP	Evacuation is a major consequence of an accident that can be quoted.		X It is proposed to use the term "evacuation considerations" for more clarity and broader coverage.		
NUSSC	India	1	Section 2	SSG-4 ~~(Rev.1)~~	Instead of SSG-4 (Rev.1), it should be changed to SSG-4 as currently Rev.1 has not been published.	X			
NUSSC	WNA	2	Section 2	Level 3 PSA represents ~~the final~~ **an additional** level of assessment, focusing on the radiological consequences attributable to individual and societal risk	"final" may let think that PSA stopping at level 2 are incomplete whereas it is sufficient in most of the countries	X			
NUSSC	WNA	4	Section 2	Nevertheless, an increasing number of organizations in ~~a multitude of~~ **some** Member States are engaged in the advancement and implementation of Level 3 PSA	This seems exaggerated. Right now very few countries would accept a safety demonstration based on PSA3		X Propose to use "*several*" as per comment #2 from Ireland (EPReSC)		
NUSSC	South Africa	1	Section 2, 2nd paragraph	While Level 1 and Level 2 PSAs have ~~now~~ been completed ~~carried out~~ for most NPPs worldwide~~,~~ - estimating core/fuel damage frequency and radiological release frequency correspondingly~~,~~ - Level 3 PSA studies are relatively uncommon~~infrequent~~.~~,~~ ~~h~~However, ~~there have been~~ recent advancements in research and some national regulations have brought renewed attention to ~~in the area of~~ Level 3 PSA.	The sentence reads better.	X			

EPReSC	Ireland	1	Section 2, Para 2	While Level 1 and Level 2 PSAs have now been carried out for most NPPs worldwide, estimating core/fuel damage frequency and radiological release frequency correspondingly, Level 3 PSA studies are relatively infrequent. However, there have been recent advancements in research and some national regulations in relation to Level 3 PSAs.	Reads better.		X Suggestions accepted, but slightly modified according to comment #1 from South Africa (NUSSC): "*infrequent*" changed to "*uncommon*", and it was also reworded as "*recent advancements in research and some national regulations have brought renewed attention in relation to Level 3 PSAs*"		
EPReSC	Ireland	2	Section 2, Para 3	Nevertheless, an increasing number of organizations in several Member States are engaged in the advancement and implementation of Level 3 PSAs highlighting its benefits..	Reads better.	X			
EPReSC	Ireland	3	Section 2, Para 4	Also, following the Fukushima Daiichi nuclear accident in 2011, additional interest was expressed by Member States in relation to Level 3 PSAs, particularly for the assessment of multi-unit accidents involving multiple source term releases.	Reads better.	X			
EPReSC	Ireland	4	Section 2, Para 5	Compared to Level 1 and Level 2 PSAs, for which the methodologies are sufficiently developed and documented in various guidance documents, including in two IAEA Specific Safety Guides, SSG-3 (Rev.1) and SSG-4 (Rev.1), there is no IAEA Safety Guide which establishes the recommendations for Level 3 PSAs. The IAEA Safety Series No. 50-P-12, published in 1996, is the sole publication on a Level 3 PSA. It discusses the purpose of a Level 3 PSA, the generic methodology, and provides descriptions of the procedure, review, and management of a Level 3 PSA project. This publication represents neither a detailed procedural guide, nor an exhaustive set of recommendations for meeting the requirements of GSR Part 4 (Rev. 1) in relation to development and application of a Level 3 PSA.	Reads better.	X			

NUSSC	India	2	Section 2 (0/2ND line (page-1/6))	A Level 3 Probabilistic Safety Assessment (PSA) provides estimates related to the public health and other radiological consequences (e.g. contamination of land, water, air ~~or~~ and food) from the accident sequences that lead to a release of radioactive material to the environment.	Adverse consequences will also affect to water and air.		X Propose to remove the example in brackets and keep it general.		
NUSSC	ENISS	1	Section 2 1st para.	"In the ~~conventional progressive~~ three-level PSA framework …"	Conventional is not appropriate since L3 PSA are not worldwide developed. Progressive is meaningless in this instance	X			
NUSSC	ENISS	2	Section 2 1st para.	… a Level 3 PSA ~~represents the final level of assessment,~~ may focus ~~focusing~~ on the radiological consequences attributable to individual and societal risk	Writing "final assessment" is biased. It let the reader think that without that level the PSA task is uncomplete. A "may" is inserted because the scope of L3 PSA may be different		X Changed to "an additional level of assessment" based on comment from #2 by WNA. Since radiological consequences are always in the scope of Level 3 PSA by definition, it is suggest to not use "may"		
NUSSC	ENISS	3	Section 2 1st para.	A level 3 PSA ~~is directly aimed at assessing~~ can be used to assess the risk for people and the environment from nuclear installations, …	L3 PSA is not worldwide developed and required to achieve safety objectives.			X	The sentence in DPP does not actually suggest that the Level 3 PSA is being widely applied. The main idea is that whenever it is used it is directly applied for a given objective. It is proposed to keep it as is.
NUSSC	WNA	3	Section 2	A Level 3 PSA is directly aimed at assessing the risk for people and the environment from nuclear installations, and therefore constitutes ~~an important~~ **a possible** tool to be used in achieving compliance with the fundamental safety objective…	"Important" suggests that it is necessary whereas, in most countries, demonstration of the fundamental safety objective can be achieved without relying on PSA3	X			
NUSSC	ENISS	4	Section 2 1st para.	…, ~~and therefore constitutes an important tool to be used in achieving compliance with the fundamental safety objective "to protect people and the environment from harmful effects of ionizing radiation" as the IAEA Fundamental Safety Principles, Safety Fundamentals No. SF-1 states~~	This is an over-simplistic statement. If one could show this is not completely non-sense, it is a very pre-emptive way of asserting the way to achieve this fundamental safety objective.		X Text modified as per comment #3 from WNA: "possible" instead "important" to avoid that perception		
NUSSC	ENISS	5	Section 2 2nd para.	… there have been recent advancements in research (references to be added) and some national regulations in the area of Level 3 PSA (references to be added)	What are the recent R&D results which would justify a wider use of Level 3 PSA? It would be good to share on the real positions of the national regulators.	X References and relevant IAEA activities added.			

NUSSC	ENISS	6	Section 2 3rd para.	"Nevertheless, an increasing number of organisations in few Member States ~~in a multitude of Member States~~ are engaged …"	To nuance the number.		X Propose to use "*several*" as per comment #2 from Ireland (EPReSC)		
NUSSC	ENISS	7	Section 2 3rd para.	… an increasing number of organizations in a multitude of Member States are engaged in the advancement and implementation of Level 3 PSA highlighting its benefits for risk informed decision making process and other applications (provide references)	Too vague. Please provide references. Need to make a difference between R&D initiatives (or exploratory cases) and industrial applications	X			
NUSSC	ENISS	8	Section 2 3rd para.	The growing interest is also driven by the rapid developments in the area of non-water-cooled reactors, for which the traditional risk metrics connected with core damage might not be representative	The consequence of that is the need to work on new metrics in PSA at a level which would merge Level 1 and Level 2. This does not call for Level 3 right away, and far from it.		X We agree that it doed not call directly to Level 3 PSA as an exclusive solution. But at the same time this National regulators could establish specific probabilistic safety goals for some projects based on off-site consequences. This approach refers to Level 3 PSA. Example: HTR-PM in China.		
NUSSC	ENISS	9	Section 2 3rd para.	~~risk metrics related to the off-site radiological consequences could be applied in order to gain meaningful risk insights with regard to the factors influencing public health~~	This is already written in the 1st para of section 2. Nothing specific to the NWCRs			X	Kindly refer to the previous comment
NUSSC	ENISS	10	Section 2 4th para.	~~Also, following the Fukushima accident, additional interest was expressed by Member States in relation to Level 3 PSAs, particularly for assessment of multi-unit accidents involving multiple source term releases.~~	To the best of our knowledge, based on our international monitoring, it does not appear that multi-unit Level 3 PSA has been conducted before and that interest to perform this kind of study is increasing abroad. Multi-unit PSA is a complex task even for Level 1 and Level 2 PSA, and it may not be needed in all instances. Note that uncertainties inherent to such analysis are difficult to address within the L1&2 results interpretation. The extension to L3 PSA will make uncertainties even more difficult to understand.			X	IAEA had completed number of activities (list was added in section 2 of the DPP), in which multi-unit level 3 PSA considerations were discussed. Also the benefits and approaches for the use of Level 3 PSA for MU context was specifically discussed during the IAEA effort on MUPSA which is summarized in Safety Report 110 and Safety Report 92, and which also uses the outcomes of national experiences and pprojects (e.g. USNRC project on site level Level 3 PRA, UK national experience, Level 3 PSA for MU sites in Republic of Korea)

NUSSC	ENISS	11	Section 2 4th para.	Also, following the Fukushima accident, additional interest was expressed by Member States in relation to Level 3 PSAs, particularly for assessment of multi-unit accidents involving multiple source term releases (references to be provided).	If not deleted as requested by the previous comment, please provide the list of MS who expressed this interest, to which extent it was expressed, and if ths is still valid.			X	See response to ENISS comment 10
NUSSC	Germany	1	Section 2 Line 3	… In the conventional progressive three-level PSA framework for nuclear power plants (NPPs), a Level 3 PSA represents the final level of assessment, focusing on the radiological consequences attributable to individual and societal risk (e.g. radiation doses, health effects, contaminated areas, associated economic costs) due to severe accidents at NPPs and other nuclear installations. …	To emphasize, that relevant, high radiological releases occur only in severe nuclear accidents. Alternatively, it could be phrased as "… accidents with radioactive releases…" as in Section 4, line 3.	X			
NUSSC	France	3	Section 3	Additional text at the end of chapter 3: Considering the background mentioned above, notably, in most countries, the absence of regulatory requirement for level 3 PSA and the relatively low level of its development worldwide, the guidance will present carefully its recommendations without enhancing the need or not of the development of level 3 PSA.	It would have been worthwhile (and maybe more relevant) to develop preliminary some other documents to ensure that a common view on this topic is feasible		X This idea is specifically emphasised in Section 2 i.e. *"A Level 3 PSA is explicitly required by the national regulations in some Member States, while in most countries, the nuclear regulatory authorities do not mandate the performance and submission of a Level 3 PSA for NPPs."* However, in order to re-emphasise this idea the following simpler text was added at the end of Section 3 *"…acknowledging the variety of national regulatory approaches on requirements to Level 3 PSA"*		

NUSSC	WNA	5	Section 3	Currently, there is no Safety Guide on development and application of Level 3 PSA for NPPs ~~and this gap was highlighted~~ **as mentioned in IAEA Safety Reports Series No. 123** when reviewing the applicability of current Safety Standards to non-water cooled reactors and small modular reactors (SMRs), ~~which is summarised in IAEA Safety Reports Series No. 123.~~	I could not find in SRS123 any statement that the lack of PSA3 guidance was a lack that necessarily had to be filled for SMR and NWCR development	X			
EPReSC	Ireland	5	Section 3, Para 1	Currently, there is no Safety Guide on the development and application of a Level 3 PSA for NPPs. This gap was highlighted when reviewing the applicability of current Safety Standards to non-water cooled reactors and small modular reactors (SMRs), which is summarised in IAEA Safety Reports Series No. 123.	Reads better.		X Text modified as per comment #5 from WNA for more accuracy when referring to IAEA Safety Report Series No. 123		
EPReSC	Ireland	6	Section 3, Para 2	The proposed Safety Guide will provide guidance for performing a Level 3 PSA to evaluate the radiological consequences…	Reads better.	X			
NUSSC	ENISS	12	Section 3 1st para.	~~Therefore, the existing publication cannot be updated or amended to adequately reflect an increasing need for guidance on Level 3 PSAs~~	The reasoning from what is written in the previous lines of this para.is not understood. Delete or provide more information	X explanation added that this cannot be updated or amended "*at the level of Safety Guide*"			
NUSSC	ENISS	13	Section 3 2nd para.	… ~~as well as lessons learned from the Fukushima accident.~~	Delete or explain. "lessons learnt" is much too broad to understand what is to be taken.	X			
NUSSC	ENISS	14	Section 3 3rd para.	~~The proposed Safety Guide will complement the existing set of IAEA Safety Guides on PSA SSG-3 (Rev. 1) and SSG-4 (Rev. 1) and complete the overall PSA framework in the IAEA Safety Standards.~~	Not necessary. In addition the way this is written let the reader think that without this guide no salvation.		X Text kept and added with: "*…acknowledging variety of national regulatory approaches in PSA"*		

NUSSC	Germany	2	Section 3 Line 4	… The existing IAEA Safety Series No. 50-P-12, representing a high-level, non-prescriptive iAntroduction to the assessment, does not cover the variety of considerations and recent advancements since its publication in the area of Level 3 PSAs which form the state-of-the-art methodology for carrying out a Level 3 PSA. …	We suggest to emphasize, that the current IAEA Safety Series No. 50-P-12 has already an older publication date (1996, ~ 30 years)	X			
NUSSC	Germany	3	Section 3 Line 7	… Therefore, the existing publication cannot be updated or amended at the level of Safety Guide to adequately reflect an increasing need for guidance on Level 3 PSAs.	Underlining, that Safety Guide and Safety Report are different levels of documents might be useful.	X			
NUSSC	France	4	Section 4	In addition, this Safety Guide will provide a standard framework to facilitate ~~a regulatory review or~~ peer review of a Level 3 PSA and its various applications. The Guide may comment on the expected level of details in L3 PSA depending on application (progressive approach to control the complexity of a Level 3 PSA).	As mentioned in chapter 2, regulatory review is not relevant for most countries where L3 PSA is not required. Level 3 PSA is not a common practice: the guideline should explain how useful first studies can be obtained with reasonable resources.		X It is suggested to keep only the notion of the review (without specifying whether it is regulatory or peer review) to take into considerations the countries where the Level 3 PSA is mandatory and regulatory review will be needed. Also the proposed modifications are aimed to merge the sentences in one sentence and simplify as follows: *"In addition, this Safety Guide will provide a standard framework to facilitate ~~a regulatory review or peer~~ the review of a Level 3 PSA and its various applications, taking into consideration the expected level of details in Level 3 PSA depending on specific application."*		

EPReSC	Ireland	7	Section 4, Para 1	The objective of the proposed Safety Guide is to provide recommendations for meeting the requirements of GSR Part 4 (Rev. 1), SSR-1, SSR-2/1 (Rev. 1), SSR-2/2 (Rev. 1) and GSR Part 7 regarding the evaluation of the radiological consequences in case of accidents with radioactive releases from NPPs.	Reads better.	X			
EPReSC	Ireland	8	Section 4, Para 2	It is expected that the Safety Guide, which will support harmonisation of PSA methodology across Levels 1, 2 and 3, will promote…	Reads better.			X	Propose to keep only Level 3 PSA since harmonisation of the methodology across all level of PSA is out of the scope of the Safety Guide
EPReSC	Canada	1	Section 4, para 4	The Safety Guide is intended for use by designers, operating organizations, technical support organizations, **offsite authorities** and regulatory bodies in the development, application and independent review of Level 3 PSAs	Some states have a separate organization to the regulatory body that is responsible for offsite consequences.	X			
NUSSC	Saudi Arabia	3	Section 4, para. 1, line 3	Please consider reformulating this paragraph so to avoid suggesting that the evaluation of the radiological consequences in case of accidents with radioactive releases at NPPs needs to be done with a level 3 PSA.	The evaluation of the radiological consequences in case of accidents with radioactive releases at NPPs is not required to be done with a level 3 PSA and is usually done in a deterministic way.	X			
NUSSC	ENISS	15	Section 4 1st para	The objective of the proposed publication is to provide recommendations for contributing to the demonstration of compliance with ~~meeting~~ the requirements of GSR Part 4 (Rev. 1), SSR-1, SSR-2/1 (Rev. 1), SSR-2/2 (Rev. 1) and GSR Part 7 regarding the evaluation of the radiological consequences in case of accidents with radioactive releases at NPPs	GSR Part4, SSR-1, SSR-2/1 and SSR-2/2 introduce high level requirements, none of them being explicitly and directly dedicated to radiological consequences, all of them having the goal to prevent from radiological releases.	X			
NUSSC	ENISS	16	Section 4 1st para	The objective of the proposed publication is to provide recommendations for meeting the requirements of GSR Part 4 (Rev. 1), SSR-1, SSR-2/1 (Rev. 1), SSR-2/2 (Rev. 1) and GSR Part 7 regarding the evaluation of the radiological consequences in case of accidents with radioactive releases at NPPs	Ok, there could be some guidance to support the evaluation of radiological consequences, but this does not necessarily mean Level 3 PSA	X This idea was addressed in response to previous comment #15			

NUSSC	ENISS	17	Section 4 2nd para	~~It is expected that the Safety Guide, which will support harmonisation of Level 3 PSA methodology, will promote technical consistency among Level 3 PSA studies and their application to risk informed decision making.~~	It is not believed that a safety guide will be sufficient to reach a good level of harmonisation, i.e.ensuring that the applied models would give similar results in different countries (for example). In addition the relationship with the risk-informed decision making, somewhat presented as specific, is questionable. All safety analyses, deterministic and probabilistic, are factored in an appropriate Integrated Risk-Informed Decision Making process.			X	Given the work done by IAEA in the recent years (see the responses to general comments from ENISS), the significant progress in this direction could be made. The sentence refers to the supporting harmonisation, to which level is not mentioned there. So, it is proposed to keep the text as it is and not to elaborate about the expected level of harmonisation.
NUSSC	ENISS	18	Section 4 3rd para	In addition, this Safety Guide could ~~will~~ provide a standard framework ~~to~~ which may facilitate ~~a~~ regulatory ~~review~~ or peer reviews of a Level 3 PSA and its various applications	Too early to promise. Or is it a goal?			X	It is currently formulated as an objective and in line with the way objectives are formulated in Safety Guides. Can be further discussed to improve the wording if needed.
NUSSC	Germany	4	Section 4 Line 5	It is expected that the Safety Guide, which will support harmonisation of Level 3 PSA ~~methodology~~ methodologies, will promote technical consistency among Level 3 PSA studies, comparability of Level 3 PSA results and their application to risk informed decision making.	1) Clarification, as there is more than one methodology. 2) Due to different approaches, aims and methods of Level 3 PSA studies, the comparability of its results can be complicated. A harmonization of Level 3 PSA however, would increase the comparability.	X			
NUSSC	Japan	1	Section 5	This proposed Safety Guide will address the necessary methodological technical features of a Level 3 PSA and its applications for NPPs (both existing and new NPPs), on the basis of internationally recognized good practices and Member States' experience. The Safety Guide will emphasize the procedural steps and essential elements of the PSA rather than the details of the modelling methods. This Safety Guide also includes a sensitivity and uncertainty analysis.	Clarification. Sensitivity and uncertainty analysis are already included in the SSGs for Level 1 and Level 2 PSAs, and sensitivity and uncertainty analysis are also important for Level 3 PSAs.		X For simplicity the sentence is merged with the previous one in brackets.		
NUSSC	WNA	6	Section 5	The recommendations of this Safety Guide are intended to be technology inclusive ~~**to the extent possible**~~, and it is expected that the recommendations will be applicable to various types of nuclear power plants, including SMRs and non-water cooled reactors	The "*to the extent possible*" is debatable. On the contrary, what is needed is a **fully technology-inclusive approach** with, if deemed appropriate, some examples of developing guidelines for specific applications.	X			

NUSSC	Saudi Arabia	4	Section 5, last paragraph	Please consider reformulating this paragraph in a more cautious way by considering the consistency of the scope of level 2 PSA and level 3 PSA, particularly in case the source term data from level 2 PSA is used as input for level 3 PSA.	SSG-4 (Rev. 1) does not explicitly apply to "various types of nuclear power plants, including SMRs and non-water cooled reactors".	X			
EPReSC	Ireland	9	Section 5, Para 2	The Safety Guide will focus mostly on the off-site consequences. However, aspects related to the on-site consequences assessment will also be addressed in the Safety Guide	Reads better.		X Text was deleted as per comment #22 from ENISS		
EPReSC	Ireland	10	Section 5, Para 4	However, it is expected that the recommendations in the Safety Guide may also be applied for sources of radioactivity other than reactors and SFPs~~, with judgement~~.	This seems quite a broad statement and should be clarified (e.g. what other sources of radioactivity?).			X	Examples provided in previous sentence: *"Other sources of radioactivity from the plant (e.g. dry storage of irradiated fuel, stored radioactive waste) are out of the scope of the Safety Guide. However…"* It is proposed to keep the remark "with judgement" since additional considerations, for e.g., specific risk metrics, could be needed in these cases. Also it is in line with the wording used in the past for such cases (e.g. para 1.6 of SSR-2/1)
NUSSC	ENISS	19	Section 5 1st para.	This proposed Safety Guide will address the necessary methodological technical features of a Level 3 PSA … The Safety Guide will emphasize the procedural steps and essential elements …	More details are needed to understand what is meant by "necessary methodological technical features" and by "procedural steps and essential elements". A way may be to describe what are the developments which will still be necessary for an application by national authorities or licensees.	X The text refers to the methodological aspects. Rephrased			
NUSSC	ENISS	20	Section 5 1st para.	~~(both existing and new NPPs),~~	Not necessary to specify. Or please explain the reason for it. Especially, one of the reason which is put forward in this DPP to justify this new safety guide is the needs for some new technologies	X			
NUSSC	ENISS	21	Section 5 1st para.	…on the basis of internationally recognized good practices and Member States' experience (provide published references)	Is it possible to assert that there are good practices sufficiently recognised?	X Section 2 and the Annex was complemented with the list of IAEA activities and references			

NUSSC	ENISS	22	Section 5 2nd para.	… ~~aspects related to the on-site consequences assessment will also be addressed in the Safety Guide~~.	Please provide examples of existing and successful probabilistic analyses for on-site radiological consequences. Successful meaning that it has gone beyond the research stage and it has already provided useful outcomes	X			
NUSSC	ENISS	23	Section 5 3rd para.	… multi-unit Level 3 PSA … (including sites with multi-module SMRs), …	First, the way the multi-module SMRs are introduced shows a potential misunderstanding. Generally it can be understood that results might be needed multi-module SMRs. And please justify the need for multi-unit modelling at the level of probabilistic radiological consequence evaluation. The existence of national regulatory requirements cannot be a sufficient justification.			X	MM SMRs are considered to be a particular case of Multi-unit considerations. It is not clear for the IAEA drafting team what was found to be not applicable in this context. Open for further discussion and relevant changes in the DPP.
NUSSC	ENISS	24	Section 5 6th para.	The recommendations of this Safety Guide are intended to be technology inclusive to the extent possible	Please explain which could be the limitations		X Text modified as per comment #4 from Saudi Arabia and #6 from WNA		
NUSSC	France	5	Section 6	Add "INSAG-25 - A Framework for an Integrated Risk Informed Decision Making Process"	Considering that risk informed decision making is explicitly mentioned in the DPP (chapter 4) and that the topic of the DPP is PSA, it is important to add as a reference a well-recognized document to enhance that RIDM relies on a large part on deterministic approach.	X			
EPReSC	Ireland	11	Section 6	Given the interfaces with other IAEA Safety Standards listed above, the Safety Guide is planned to be developed in close co-operation with NSNI/EESS, NSRW and IEC.	Either delete this sentence or explain the acronyms.	X			
WASSC	Korea	2	Section 6 Page 3 Line 16	With regard to the section 6, the following documents should be included. IAEA-TECDOC-1909 (2020) IAEA-TECDOC-2044 (2024) IAEA-TECDOC-2081 (2025)	o I think that those documents are related with the risk informed decision making and PSA.	X			

NUSSC	Saudi Arabia	5	Section 6, 1st paragraph	Please provide more explanation on how the proposed SSG will provide recommendations in line with requirements under revision.	The IAEA safety requirements mentioned as interfacing with the proposed SSG are under revision (e.g. SSR-1, SSR-2/2 (Rev. 1)) or are planned to be revised very soon (e.g. GSR Part 7, SSR-2/1 (Rev.1)).	X	The consistency will be ensured according to the established practice of developing Safety Standards in parallel. The context with mentioned Safety Requirements is already have been discussed internally (especially within NSNI) and the driving mechanisms and changes expected in them are being continuously communicating between relevant TOs within IAEA. In addition, it needs to be noted that the mentioned requirements are providing high level statements in the aspects related to Level 3 PSA, so it is not expected that they will change significantly. It is more important to keep consistency with DS528 and DS529 which will affect this Guide extensively, and both DS528 and DS529 are currently close to publication.		
NUSSC	Germany	5	Section 6 Line 12	DS529 Investigation of Site Characteristics and Evaluation of Radiation Risks to the Public and the Environment in Site Evaluation for Nuclear Installations (revision of NS-G-3.2). The proposed Safety Guide will make special reference with DS529 where detailed recommendations are provided on all radiation dispersion mechanisms in air, water and groundwater to be considered in case of accidental releases.	DS529 is already in Step 12, awaiting the endorsement by the 57. CSS Meeting in May 2025. Do we have a number for this publication already? Please verify.	X Unfortunately, the SSG-number has not yet been assigned.			
NUSSC	China	1	Section 7	ANNEXES (e.g., computer code for radiological consequence assessment, specific examples and Member States experience)			X Accepted but modified to reflect the comment #6 from Germany (NUSSC) as the following: *"computer codes used for simulation and analysis in Level 3 PSA"*		

EPReSC	Germany	1	Section 7 OVERWIEV	1. Introduction 2. General considerations relating to the performance and use of level 3 PSA 3. Interfaces with level 1/2 PSA ~~3.~~ 4. Project management and organization for level 3 PSA ~~4.~~ 5. Determination of level 3 PSA consequences and associated risk metrics ~~5.~~ 6. Input Data and prerequisites ~~5.~~ 7. Environmental transport and dispersion mechanisms ~~6. Input Data and prerequisites~~ ~~7. Interfaces with level 1/2 PSA~~ 8. Exposure pathways and radiological consequences assessment 9. Quantification and analysis of results ~~9.~~ 10. Consideration of countermeasures ~~10. Quantification and analysis of results~~ 11. Documentation of analysis ~~12. Level 3 PSA for spent fuel pool~~ ~~13. Level 3 PSA for multi-unit nuclear power plants~~ ~~14.~~ 12. Use and applications of level 3 PSA Reference Annex I Level 3 PSA for spent fuel pool Annex II Level 3 PSA for multi-unit nuclear power plants [Annexes (e.g., specific examples and Member States experience)]	We suggest arranging the chapters in the order in which they are likely to be applied (e.g. input data will be necessary before calculation of the dispersion can be conducted). We also suggest that the main text should refer to special features of Level 3 PSA for specific facilities (i.e. spent fuel pool and multi-unit NPPs); details however might be included in the annex.		X Content reviewed and some modifications made considering also the other comments received to the Section 7. It is proposed to keep the consistency with the structure of SSG-3 (Rev. 1) and revision of SSG-4 (DS528) (e.g., interfaces with previous steps, having separate section on Project Management, separate section for SFP and multi-unit). As for moving quantification before countermeasures, it is proposed to keep them as it is since the quantification and analysis section may assume some sensitivity studies on countermeasures, so it is better to discuss countermeasures before		
NUSSC	Saudi Arabia	6	Section 7, item 7 (INTERFACES WITH LEVEL 1/2 PSA)	See comment No. 4.					
WASSC	Korea	3	Section 7Page 4	The general comment on the tentative table of contents in the section 7. OVERVIEW	o The contents should be elaborated taking into account the characteristics of Level 3 PSA and risk informed decision making during the development of the guide.	X			
NUSSC	China	2	Section 7 7	Radiological consequence assessments should clarify the general principles for considering meteorological condition representativeness and uncertainty.	/	X Specific considerations will be accounted for during the development of this specific chapter of the Guide			

NUSSC	China	3	Section 7 10	For result quantification and analysis, it is recommended to account for differences in economic levels and population densities at the plant site location.	/	X Specific considerations will be accounted for during the development of this specific chapter of the Guide			
NUSSC	China	4	Section 7 13	It is recommended that multi-unit Level 3 PSA be limited to multi-modular reactor types (e.g., SMRs, HTGRs).	/			X	This aspect needs to be in consistence with SSG-3 (Rev.1) and upcoming revision of SSG-4. Multi-unit aspects may be significant contributor to overall risk on public health versus single-unit when talking about conventional large power units.
NUSSC	India	5	Section 7 4.0 (Page-4/6)	~~DETERMINATION OF~~ LEVEL 3 PSA CONSEQUENCES AND ASSOCIATED RISK METRICS	This chapter should focus on description of various the L3 PSA risk metrics. Determination of the risk metrics will be part of the analysis.	X			
NUSSC	India	6	Section 7 6.0 (Page-4/6)	~~5.~~ 7. ENVIRONMENTAL TRANSPORT AND DISPERSION MECHANISMS ~~7.~~ 5. INTERFACES WITH LEVEL 1/2 PSA	The sequences can be reordered based on process of conducting Level-3 PSA.	X Also see response to comment #1 from Poland and # 1 from Germany (EPReSC)			
NUSSC	Germany	6	Section 7 Line 19	ANNEXES (e.g., computer codes used for simulation and analysis in Level 3 PSA, specific examples and Member States experience)	An overview of computer codes used for simulation and analysis in Level 3 PSA (similar as in IAEA Specific Safety Guide No. SSG-4, Annex II) would be helpful.	X			

NUSSC	Poland	1	Section 7 Overview	Content does not fully and explicitly cover all the issues mentioned in sections 2 and 5. It lacks information on assessment of economic costs and considerations for SMRs (if SMR is near an industrial facility, should the societal risk be assessed jointly?) Additionally, the content seems more like a collection of issues and topics, but not a structured way of performing the analysis. Propositions for consideration: Merge chapters 3 and 11, as the documentation of analysis might be covered under project management. Chapter 5 could be after 6 and 7, as it relates closely to Chapter 8. Chapters 6 and 7 could switch, as PSA level 1 & 2 will inform the input data – might also be merged. Possibly add a chapter on assessment of economic costs. Possibly add a chapter on special considerations for SMRs.	PAA supports this draft, nevertheless, the proposed content might need improvement.		X Content reviewed and modified according to some of the recommendations and considering the other comments received to chapter 7. Some remarks are provided below: Assessment economic costs is considered as a not primary objective of Level 3 PSA, and given that the Guide is focused on safety the economic aspects could be considered during the development of the Guide and might ba included within Annexes. Regarding merging chapter 3 and 11 it is suggested to keep them as they are and in consistence with content structure of SSG-3 (Rev.1) and upcoming revision of SSG-4. See also other comments to the Section 7.		
NUSSC	India	3	Section 7 sr. no. 2.0 (page-4/6)	GENERAL CONSIDERATIONS ~~RELATING TO THE~~ FOR PERFORMANCE AND USE OF LEVEL 3 PSA	For clarity. More clear title.	X			
NUSSC	India	4	Section 7 sr. no. 3.0 (page-4/6)	PROJECT MANAGEMENT ~~AND ORGANIZATION~~ FOR LEVEL 3 PSA	Project Management includes Organisational aspects required for Level-3 PSA.			X	Titles for common introductory sections need to be in consistent in PSA-related Safety Guides (SSG-3 (Rev .1) and upcoming revision of SSG-4) for the purpose of connectivity.