

SPESS F Document Preparation Profile (DPP) Version 8 dated 2026-03-26

1. IDENTIFICATION

Document Category: Safety Requirements

Working ID: DS565

Proposed Title: Leadership, Management and Culture for Safety

Proposed Action: Revision of the IAEA Safety Standard GSR Part 2 – Leadership and Management for Safety

Review Committee(s) or Group: NUSSC, RASSC, TRANSSC, WASSC, NSGC, EPRéSC

Technical Officer(s): Monica HAAGE

2. BACKGROUND

The IAEA Safety Standard on Leadership and Management for Safety – GSR Part 2 encompasses several cross-cutting requirements which are based on the IAEA Fundamental Safety Principles SF-1, in particular the Fundamental Safety Principle 3: Leadership and management for safety. GSR Part 2 requirements are applicable throughout the entire lifetime of all facilities and activities — existing and new — utilized for peaceful purposes and to protective actions to reduce existing radiation risks. They also apply to the regulatory bodies and other relevant governmental organizations as a basis for meeting their responsibilities in relation to safety.

GSR Part 2 was the first IAEA Safety Standard integrating the provisions related to the integrated management system, with requirements on leadership and culture for safety. GSR Part 2 was first issued in 2016. Since its publication in 2016, the Agency and its Member States have gained extensive experience regarding the implementation of the requirements and more has been learned about the pivotal role that leadership, management and culture play in safety.

The decision to revise the Safety Standard is supported by a feedback analysis to identify gaps of the existing requirements. In addition, a consultancy meeting was held on the 9-13 of March 2026 to obtain international experts' perspectives and views on this revision. A survey was also sent out to internal and external experts to gain further input on the current GSR Part 2 requirements to complement the information on challenges in the application of the requirements of GSR Part 2 and the need for its revision.

The topics of management, leadership and culture for safety are addressed in several IAEA Safety Standards and other IAEA publications. However, GSR Part 2 plays a central role in aligning and linking these topics to allow more effective application. A revision of GSR Part 2 will further reinforce and enhance requirements in the area of leadership, management and culture for safety.

3. JUSTIFICATION FOR THE PRODUCTION OF THE PUBLICATION

Meta- and gap analyses were performed to collect feedback to determine whether there is a need for revision of GSR Part 2. A survey was sent out to collect feedback from experts working with leadership,

management and culture for safety in various industry organizations, including both nuclear and radiation technology applications, as well as regulatory bodies. In addition, a consultancy meeting was also held 9-13 of March 2026 to obtain further feedback on the useability of, and suggestions for the revision of, GSR Part 2. As further details in the Annex demonstrate, the gap analysis was based on a meta-analysis of six IAEA peer review services (INSARR, IRRS, ISCA, ORPAS, OSART, SALTO) results over the last 10 years. Information related to requirements of GSR Part 2, namely leadership, management and culture was extracted from these reports. This compiled information together with further input from Member States will be used in the revision of GSR Part 2. It has been recognized that the following need to be enhanced in the revised GSR Part 2:

- Several requirements need to be adapted to a broader range of facilities and activities and all entities with responsibilities for safety. The current requirements mainly focus on nuclear installations.
- The roles and responsibilities of the government and the regulatory body regarding the promotion, establishment and oversight of leadership, management and culture for safety in the current version of GSR Part 2 should be further clarified to promote the establishment of robust and top-down governmental, legal and regulatory frameworks aligned with SF-1 and GSR Part 1 (Rev. 1).
- Some of the requirements need to be reframed to include applicability to governments and regulatory authorities. For example, the meta-analysis of 10 years of IRRS mission results shows that regulatory bodies generally receive a high number of recommendations related to their internal leadership and safety culture.
- Several of the existing requirements and concepts remain difficult to understand and implement. The gap analysis shows that most review services identified challenges in implementing an effective integrated management system, safety culture assessments, and safety culture improvements. This shows the need for improving the requirements' formulations and applicability.
- All feedback highlighted the need for clarity on what is meant by 'leadership for safety'. Currently the definition is only a footnote. Clarifying information is needed on the difference between leadership and management for safety. In addition, it would help the Member States to elaborate on what is required to foster leadership for safety in practice, to ensure enhanced capacity in this area.
- The survey results and the consultancy meeting experts highlighted the need to address the changing environment due to several issues, such as new technology developments, unexpected exceptional conditions (e.g. pandemic situation), generational and workforce changes as well as other contextual factors have to be considered. The existing requirements need to be updated to incorporate measures to adapt to these fluctuating factors.
- The provisions related to knowledge management need to be further elaborated, mainly to achieve better clarity for their practical application. This has been demonstrated by the gap analysis which highlights as a common theme across the different review services that knowledge management is critical for retaining expertise, ensuring smooth transitioning and ensuring safe operations.
- The important lessons learned from the Fukushima accident and the requirement for a systemic approach to safety need to be further elaborated. The current GSR Part 2 mentions a systemic approach to taking proactive measures for safety, but this needs to be clarified to make it easier to understand and apply.

Overall, the gap analysis, the survey results, and the experts' feedback during the consultancy meeting provide a strong justification for the revision of GSR Part 2. It was identified that requirements in GSR Part 2 need to be aligned with current international practices, lessons learned from peer reviews, and research. The requirements need reframing so that they can be applied beyond nuclear installations to support management within governments, regulatory authorities and technical support organizations (TSOs) with enhancing safety in organizations e.g. involved with medical applications, industrial radiation applications, radioactive material transportation, radioactive waste management, and the nuclear fuel cycle. In addition, the language and some of the concepts deserve further clarification to better support their effective implementation.

Advisory Missions on Regulatory Infrastructure for Radiation Safety and Nuclear Security (RISS) have been implemented since 2020. RISS missions review the status of the regulatory infrastructure against IAEA safety requirements and nuclear security recommendations, primarily in countries with radiation facilities. While outcomes of these missions were not included in the gap analysis, preliminary feedback showed that regulatory bodies of countries hosting RISS missions have some difficulties in understanding and applying GSR Part 2 requirements both regarding its applicability within the regulatory bodies and other competent authorities and regarding the establishment of corresponding provisions in the national regulations and the verification of compliance.

4. OBJECTIVE

The objective of this revision of GSR Part 2 is to update and expand the requirements on leadership, management and culture for safety. The revision will aim to balance the number of requirements to be equally distributed for the three areas, i.e. leadership, management and culture for safety. Consequently, the title of GSR Part will be changed to Leadership, Management and Culture to align with the expanded content of requirements. The current edition is mainly focused on the application for nuclear installations. The objective is to effectively revise the requirements to be applicable for all types of activities and facilities where this Safety Standard is used by Member States. The objective is also to incorporate the lessons learned in the last ten years together with the latest research, developments, feedback from operating and regulatory experience, and feedback from international review services and Member States' practices. The new insights from the meta- and gap analyses will also serve as a basis for the revision.

The revised Safety Standard will provide updated and expanded requirements for the benefit of Member States in the area of leadership, management and culture for safety.

5. SCOPE

The scope and target audience of the publication will remain essentially unchanged. However, some modifications will be performed to enhance the requirements' clarity, useability and alignment with Member States feedback as well as recent research. Alignment with other IAEA Safety Standards that have been revised since GSR Part 2 was published in 2016 will also be incorporated into this revision.

6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS

The revised GSR Part 2 will maintain its place within the IAEA Safety Standards Series. They will continue to align with IAEA Safety Standards Series Nos SF-1, Fundamental Safety Principles (2006), GSR Part 1 (Rev. 1), Governmental, Legal and Regulatory Framework for Safety (2016) and GSR Part

3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (2014), as well as the other general and specific safety requirement publications.

NSRW, NSOC, IEC, NSNS, NSNI, and NE will be consulted during the drafting process to provide input, as appropriate.

7. OVERVIEW

The table of contents is planned to be similar to current version of GSR Part 2. However, it is expected that more requirements will be established for leadership for safety and culture for safety to provide a better balance between the three equally important areas, i.e., leadership, management and culture for safety. The following structure is planned, but it may be modified, condensed or expanded during the review process as a result of inputs from experts involved in the drafting, Safety Standards Committees, Member States and the Commission on Safety Standards.

CONTENTS

INTRODUCTION

- Background

- Objective

- Scope

- Structure

RESPONSIBILITY FOR SAFETY

- Achieving the fundamental safety objective

LEADERSHIP FOR SAFETY

- Demonstration of leadership for safety

- Fostering of leadership for safety

- Leadership for safety's interplay with management and culture for safety

- Continuous improvement of the leadership for safety (including assessments and monitoring)

MANAGEMENT FOR SAFETY

- Responsibility of management for safety

- The integrated management system

- Goals, strategies, plans and objectives

- Interaction with interested parties

- Risk management (including uncertainties)

- Application of the graded approach

- Management and provision of resources

- Management of the supply chain

- Continuous improvement of the integrated management system (measurement, audits and assessment)

CULTURE FOR SAFETY

- Proactive culture for safety conduct

Signs of decline in the culture for safety

Integrated approach of culture for safety

Continuous improvement of culture for safety (including assessments and monitoring)

REFERENCES

CONTRIBUTORS TO DRAFTING AND REVIEW

8. PRODUCTION SCHEDULE:

Provisional schedule for preparation of the publication, outlining realistic expected dates for each step
(fill the column corresponding to your proposed publication and delete the other columns):

STEP 1: Preparing a DPP	DONE
STEP 2: Internal review of the DPP (Approval by the Coordination Committee)	Q1 2026
STEP 3: Review of the DPP by the review Committee(s) (Approval by review Committee(s))	Q2 2026
STEP 4: Review of the DPP by the CSS (approval by CSS) or information of the CSS on the DPP	Q4 2026
STEP 5: Preparing the draft publication	Q2 2027
STEP 6: First internal review of the draft publication (Approval by the Coordination Committee)	Q3 2027
STEP 7: First review of the draft publication by the review Committee(s) (Approval for submission to Member States for comments)	Q4 2027
STEP 8: Soliciting comments by Member States	Q2 2028
STEP 9: Addressing comments by Member States	Q3 2028
STEP 10: Second internal review of the draft publication (Approval by the Coordination Committee)	Q4 2028
STEP 11: Second review of the draft publication by the review Committee(s) (Approval of the draft)	Q2 2029
STEP 12: (For Safety Standards) Editing of the draft publication in MTCD and endorsement of the draft publication by the CSS (For nuclear security guidance) DDG's decision on whether additional consultation is needed, establishment by the Publications Committee and editing	Q4 2029
STEP 13: Approval by the Board of Governors (for SF and SR only)	Q3 2030
STEP 14: Target publication date	Q1 2031

9. RESOURCES

Staff: 30 person-weeks.

Home based assignments: 10 person-weeks by selected experts for drafting.

Consultancy meetings: 20 person-weeks.

A Technical Meeting will be considered.

ANNEX

Annex: Feedback analysis report

This feedback analysis report compiles the results of three information gathering exercises.

- (a) Meta- and gap analyses
- (b) Survey
- (c) Consultancy meeting

(a) Meta- and gap analyses

Objectives of the analyses

The first objective of these analyses is to provide factual data on common themes from the last 10 years (meta-analysis) to support a gap analysis to provide information for the decision on the revision of GSR Part 2. Secondly, the compiled information will serve as an objective foundation for the potential revision of GSR Part 2. Thirdly, the results of the analyses will provide a better understanding of the regional differences that can be instrumental for further improvement in the area of leadership, management and culture for safety.

Methodology

Information related to requirements of GSR Part 2 (i.e. on leadership, management and culture for safety) was extracted from reports of various IAEA peer review services (INSARR, IRRS, ISCA, ORPAS, OSART, SALTO) issued between the years 2015-2025. The main focus was on gathering information on recommendations and suggestions as well as good practices.

The information gathered from each type of review service was qualitatively analysed. In addition, a meta-analysis was performed to establish common themes for each review service as well as to identify common themes across the different review service results.

A gap analysis was then conducted to compare the meta-analysis results against the existing GSR Part 2 to identify gaps and provide feedback on, for example, lack of requirements, a need for strengthening requirements, clarifying requirements or changing the scope of the requirements.

Statistics of reviewed data

The table below presents the different IAEA review services identified recommendations, suggestions and good practices related to leadership, management and culture for safety.

Peer Review	RECOMMENDATIONS	SUGGESTIONS	GOOD PRACTICES
Independent Safety Culture Assessment [ISCA]	47	40	
Integrated Safety Assessment Research Reactors [INSARR]	50	15	
Operational Safety Review Team [OSART]	27	36	22
Safety Aspects of Long Term Operation [SALTO]	78	84	
Integrated Regulatory Review Service [IRRS]	123	72	15
Occupational Radiation Protection Appraisal Service [ORPAS]		11	

(b) Survey

A survey was sent out to experts in different Member States who apply GSR Part 2 in various types of organizations such as regulatory bodies, licensees, and technical support organizations (TSOs). It was also sent out to IAEA experts working in the area of leadership, management and culture for safety. The survey consisted of 10 open-ended questions.

(c) Consultancy meeting

A consultancy meeting was held on 9-13 March 2026 in Vienna. Twenty-four experts from 12 Member States provided feedback for the revision of GSR Part 2. The experts were selected to represent a broad range of Member States and organizations (e.g. regulatory authorities, licensees, TSOs) that apply and implement GSR Part 2 in a nuclear and radiation safety context. The meeting was arranged to utilize the time efficiently to obtain the maximum amount of feedback.

Summary of compiled feedback from the survey, consultancy meeting, meta and gap analyses

Requirement on Responsibility for Safety

This requirement received contradicting feedback. Some experts advocated removing the requirement as it repeats stipulations in the Safety Fundamentals SF-1. It was also mentioned that it is different from the other requirements as it is more “outcome focused”. Below is a summary of the suggestions:

1. Incorporate responsibility for ensuring defence in depth;
 - Broaden the requirement to encompass governments, regulatory bodies, TSOs and supply chain organizations;
 - Consider adding post-accident lessons learned, emergency planning and response arrangements;
 - Add the regulatory role to establish the national framework for safety and to establish the national infrastructure.

Requirement on Leadership for Safety

This requirement received much feedback, and the comments were more in agreement that there is a need to:

- Clarify what ‘leadership for safety’ means. The term ‘leadership’ is not defined in the context of safety. Clear definitions would avoid different interpretations of the meaning of the word safety.
- Stipulate which group of management and/or employees should practice leadership for safety.
- Add detailed requirements on decision making, safety review, leadership competencies, communication approach, presence at workplaces, and fostering a learning culture rather than a blame culture.

Requirements on Management for Safety

The main feedback was that some of these requirements could be combined or converted into recommendations in a Safety Guide. The meta- and gap analyses highlighted the need for further elaboration of the requirements related to the integrated management system (IMS). In short:

- Clarify what the IMS entails and its function in relation to management for safety.
- Improve the clarity of senior managers’ accountability of the IMS and their responsibility for the IMS being aligned with the organizational structure.
- Strengthen the strategy for interaction with interested parties and define the groups of interested parties. Add the need to listen to as well as learn from interactions with interested parties.
- Add clear requirements to address the interaction between human, technical and organizational (HTO) factors, defence in depth principles, change management, risk management, knowledge management, systemic approach, emergency planning and response.
- Define the hierarchy of the IMS documents and their interrelationships, as well as the alignment with quality and ISO standards on quality management systems.
- In requirements on supply chains, clarify what cannot be outsourced and the control of supply chain safety performance.
- Elaborate on the graded approach.
- Place more emphasis on learning and continuous improvement.

Requirement on Culture for Safety

This requirement received was recognized as being very important, however all feedback emphasized the need to expand requirements on this topic. The following were suggested:

- Expand the requirement(s) to address the need for safety culture education and training, code of conduct for key positions, HTO management, cross-functional collaboration, problem identification and resolutions, continuous learning, information disclosure and public engagement.

- Add the importance of acting on non-conformances and complacency.
- Expand on senior management role-modelling and ownership for fostering a healthy culture for safety.
- Clarify what is required as proactive cultural measures by performing regular assessments and continuously improving culture for safety.
- Revise the current safety culture framework with continued lessons learned from the Fukushima accident, new research and experiences gained from 40 years of work on safety culture.