



PREPARE & CONDUCT

IAEA Safety Aspects of Long Term Operation (SALTO) Missions

The SALTO peer review is a comprehensive safety review directly addressing strategy and key elements for safe long term operation (LTO) of NPPs, which complements OSART reviews. The purpose of the Safety Aspects of Long Term Operation (SALTO) peer review service is to assist Member States in ensuring the safe long term operation of nuclear power plants, and to promote the exchange of experience and information on good practices. The peer review addresses the strategy and key elements of LTO and ageing management programmes. LTO of a nuclear power plant is defined as operation beyond an established time frame set forth by, licence term, design, standards, licence and/or regulations, which has been justified by safety assessment, with consideration given to life limiting processes and features of systems, structures and components (SSCs). Proper and safe LTO is based on the experience and practices of various Member States in areas such as plant license renewal, ageing management and revalidation of time limited ageing analyses (TLAAs).

The review focuses on performance in technical areas, related regulatory requirements, the managerial aspects of policy implementation, the control and coordination of related activities, continuous review and improvement of activities, and document control. The SALTO peer review is based on Specific Safety Requirements on NPP operation SSR- 2/2, Safety Guide NS-G-2-12 on Ageing Management for NPPs and follows the IAEA Safety Report No. 57 on Safe Long Term Operation of Nuclear Power Plants addressing LTO feasibility (feasibility studies, preconditions for LTO, plant programmes); scoping and screening of systems, structures, and components (SSCs); assessment and management of SSCs for ageing degradation for LTO; time limited ageing analyses (TLAA, also termed safety analyses that used time limited assumptions) and documentation. A peer review for reviewing ageing management and other activities relevant to LTO can be carried out at any time during the lifetime of a nuclear power plant (NPP).

KEY ISSUES & TIPS

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Key Objectives of a SALTO Mission

The review is neither a regulatory inspection nor is it an audit against national codes and standards. It is rather a technical exchange of experiences and practices at the working level aimed at strengthening the programmes, procedures and practices implemented at the plant.

The key objectives of the SALTO peer review are to provide:

- The host organization with an objective assessment of the status of the preparedness for LTO with respect to international nuclear safety standards
- The host organization with recommendations and suggestions for improvement in areas where performance falls short of international best practices
- Key staff at the host organization with an opportunity to discuss their practices with experts who have experience with related practices in the same field
- Member States with information regarding good practices identified in the course of the review
- Reviewers and observers from Member States and the IAEA staff with opportunities to broaden their experience and knowledge of their own field

SALTO Peer Review Elements

*	Workshop/Seminar on IAEA safety standards and SALTO review method
*	Pre-SALTO mission (more than one mission can be performed for one plant, if required)
*	SALTO mission
*	Follow-up SALTO mission

LTO Module of OSART mission

The plant's preparedness for LTO can also be reviewed as an optional area of an OSART mission. In this case, the LTO area is reviewed by one dedicated expert, using SALTO Guidelines and Working Note Outlines as guidance. One reviewer is reviewing the subject, and therefore the large scope of the area allows only programme-level assessment with a limited depth of review. For a deeper review (e.g. of scoping and screening, ageing management of mechanical, electrical and I&C components, and civil structures), a Pre- SALTO and a SALTO mission should be conducted.

Team Composition

<ul style="list-style-type: none"> • Team Leader (IAEA Staff) • Deputy Team Leader (IAEA Staff) • International experts (external experts & IAEA staff members): <ul style="list-style-type: none"> » Ensure a variety of national approaches to ageing management and safe LTO » In addition to his/her particular area of expertise, each reviewer has knowledge of other national approaches and relevant areas • Observer upon agreement by Team Leader & Counterpart 	<p>Experts are recruited on the basis of their technical skills in the area they will review, their evaluation skills and their knowledge of the SALTO working language (English). Efforts are made to recruit experts from Member States. Experts change for every SALTO mission.</p> <p>NO ONE FROM THE HOST COUNTRY'S NATIONALITY IS INCLUDED IN THE TEAM.</p>
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SALTO Workshop

Is a Workshop on IAEA safety standards and SALTO methodology.

Preparation of a Pre-SALTO or SALTO mission

On receipt of a request for a SALTO mission, the Team Leader is assigned, to establish the liaison contacts at the host organization, carry out the arrangement of the preparatory meeting with the plant and other organizations involved at the host country, as well as the recruitment of the external experts for the team, after the preparatory meeting at the host organization.

Preparatory Meeting at the Host Country:

- Attended by the Team Leader and the Deputy Team Leader at the plant site
- Takes place approximately 9-6 months prior the mission

Content covered by the preparatory meetings:

- The main features of the (Pre- or) SALTO mission
- The exact scope of review, reflecting the request of the host organization
- Agreement of the SALTO methodology
- Advance Information Package (AIP) scope
- Logistic support required and financial arrangements

Tasks of the Host Organization:

- To designate a host plant peer (= a hosting organization staff member which liaises between the host organization and the IAEA team)
- Prepare AIP and send to IAEA

Pre-SALTO mission

- Review existing plant programmes and LTO plans at an early stage of their preparation prior the complete implementation of LTO activities
- Conducted well in advance of entering the LTO period
- Reviews the completeness of the plant intended activities for preparation for safe LTO and the compliance of those activities with the IAEA standards and recommendations
- Typically followed by a SALTO mission

SALTO mission

Reviews the status of the LTO activities close to their completion or when completed, and prior to entering the LTO period.

Schedule of the (Pre- or) SALTO mission (working day 1-10)

1	<ul style="list-style-type: none"> • Arrival and Pre-meeting with counterparts 	<ul style="list-style-type: none"> • Free day- Social Activities (organized by counterpart) 	6
2	<ul style="list-style-type: none"> • IAEA Team Training • Entrance Meeting • Initial sessions in review areas 	<ul style="list-style-type: none"> • Team Meeting • Team training • Drafting of Working notes 	7
3	<ul style="list-style-type: none"> • Parallel Sessions in review areas • Team Meeting with host plant peer 	<ul style="list-style-type: none"> • Parallel Sessions in review areas • Finalizing of draft issues • Preparation of evaluation part of report 	8
4	<ul style="list-style-type: none"> • Parallel Sessions in review areas • Plant walk-down • Team Meeting with host plant peer 	<ul style="list-style-type: none"> • Team Meeting • Discussion with counterparts 	9
5	<ul style="list-style-type: none"> • Parallel Sessions in review areas • Plant walk-down • Team Meeting with host plant peer • Team training 	<ul style="list-style-type: none"> • Rehearsal of exit meeting speech • Exit Meeting • Departure 	10
For SALTO missions, one or two days for parallel sessions in review areas are supplemented.			

Review Methodology

The SALTO review consists of four elements:

- Review of written documents and databases
- Interviews and discussions with personnel
- Direct observations of performance, status and activities
- Discussions of evaluations/tentative conclusions within the team and with counterparts

Arrangements should be made with the counterpart regarding how to perform the discussions, interviews and observations.

Written material and databases

- Documents of general interest are included in the Advance Information Package (AIP)
- Specific information to a given area that is reviewed is only viewed by the experts responsible

Direct Observation

A substantial part of the review period is spent at the plant reviewing procedures and practices in use. The observation of work includes, nuclear and industrial safety practices, use of procedures, drawings and instructions, quality control measures in use, supervision of activities and management control of work.

Interviews and discussions with personnel

- Provides additional information not covered by the written review material
- Answers questions arising from the documentation review
- Obtain an in-depth clarification on sample programmes and activities
- Understand the work processes, duties and responsibilities

Interviews are a “give and take” discussion and provide the opportunity for all the important information to be exchanged between experts and their respective counterpart.

Development of conclusions

Formulation of recommendations and suggestions should be based on identified facts. Similarly, good practices discovered during the process of the review that should be documented for the benefit of other Member States are described in the working notes in detail sufficient to be readily understood.

Reporting

On completion of the review, the team members, under guidance and instruction of the team leader, will prepare the respective parts of the SALTO mission report, based on the working notes. The draft SALTO mission report is provided to the host organization at the exit meeting for review and comment. The issues, recommendations and suggestions, and conclusions should not be changed after the exit meeting. The final SALTO mission report is completed and issued after the mission.

The SALTO mission report contains the following information:

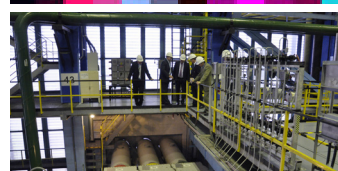
- Executive summary
- Introduction, describing the background for conducting the review, the scope and objectives of the review, and a description of the conduct of the review
- Mission results containing general conclusions, detail conclusions and good practices
- Processing and presentation of issue sheets
- Issue sheets that contain the issue description, facts and recommendations and suggestions

SALTO follow-up mission

The follow-up mission typically takes place 18- 24 months after the Pre-SALTO or SALTO mission. The purpose of a follow-up mission is to check the progress in implementing recommendations and suggestions to resolve issues. Usually, the team leader and one to three other members of the original review team take part in this mission.

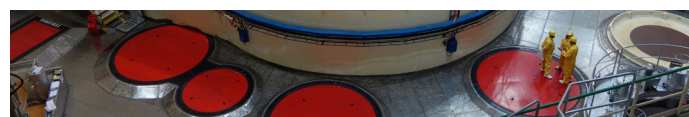
Schedule of a SALTO follow-up mission (working day 1-5)

1	<ul style="list-style-type: none"> • Arrival • IAEA team briefing
2	<ul style="list-style-type: none"> • IAEA team training • Entrance Meeting • Parallel sessions • Team Meeting
3	<ul style="list-style-type: none"> • Parallel sessions in review areas • Parallel sessions • Team Meeting
4	<ul style="list-style-type: none"> • Parallel sessions in review areas • Updating of issue sheets • Agree the updated issues with counterpart(s)
5	<ul style="list-style-type: none"> • Rehearsal of Exit Meeting speech • Exit Meeting • Departure



Expert mission based on SALTO guidelines

In addition to SALTO (Pre- mission, SALTO mission and SALTO follow-up missions) the host organization can request an expert mission that focuses on specific review areas related to LTO. Review process and methods are in accordance with the SALTO guidelines. The scope of this mission can be tailored based on the organization needs. The results of those missions are provided in experts' mission report, but not in a SALTO mission report format.

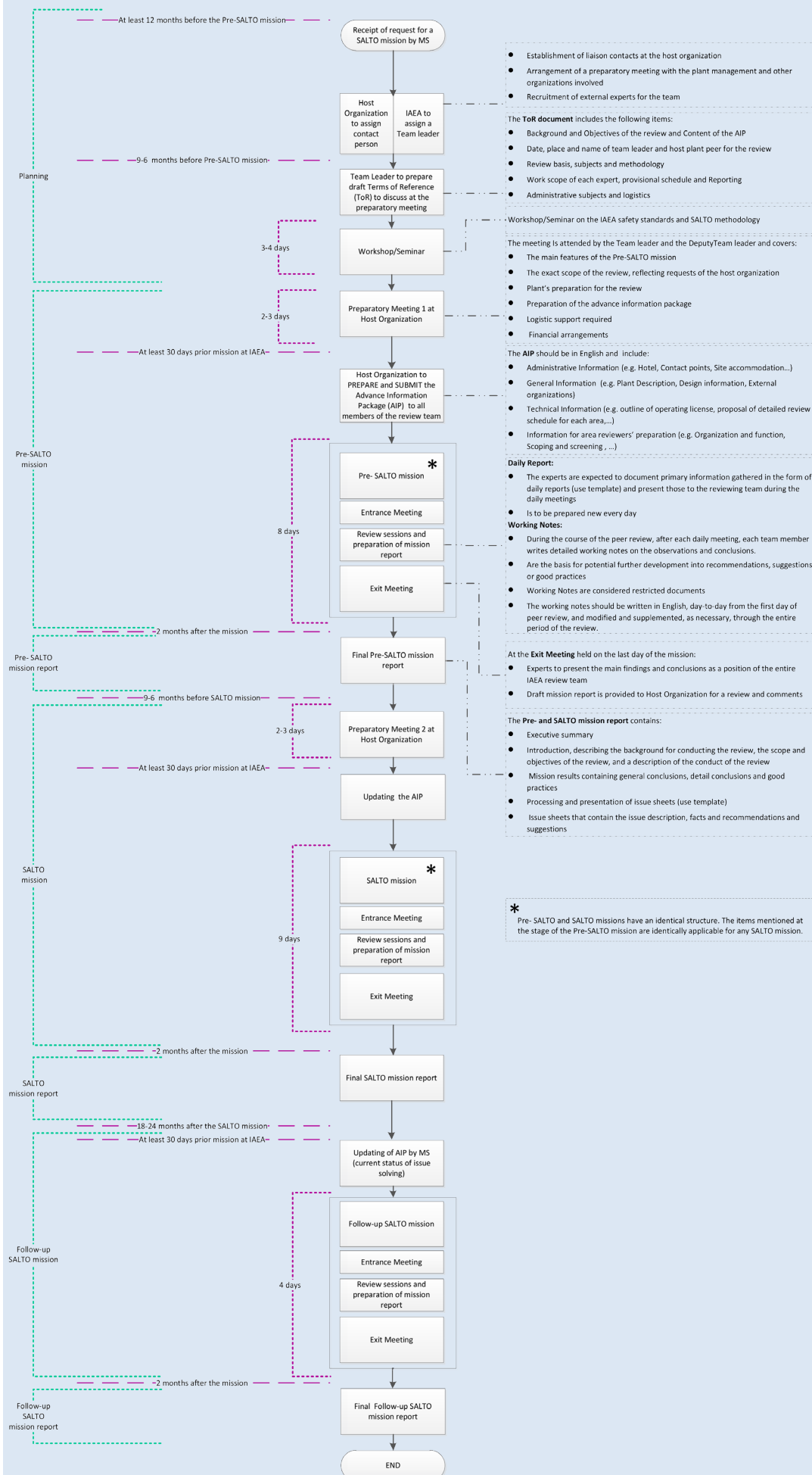


Feedback on the Safety Standards

The team members are also requested to provide feedback on the application of the IAEA safety standards (e.g. which parts need to be updated, what issues could not be referenced to the standards).



SALTO mission process flowchart



Reference material

SALTO Guidelines



SALTO Peer Review Guidelines

Guidelines for Peer Review of Safety Aspects of Long Term Operation of Nuclear Power Plants

Vienna, January 2014

NS-G-2.12

IAEA Safety Standards for protecting people and the environment

Ageing Management for Nuclear Power Plants

Safety Guide No. NS-G-2.12

Safety Report No.57

Safety Reports Series No. 57

Safe Long Term Operation of Nuclear Power Plants

Safety Report No. 82

Safety Reports Series No. 82

Ageing Management for Nuclear Power Plants: International Generic Ageing Lessons Learned (IGALL)

SALTO Mission list

Search To: SALTO	Active	Location	Completed	Rate
SALTO Follow-up Mission to Wolsong 1	2	Korea, Republic of	01-2014	
Pre-SALTO Mission to Borssele 1 and 2	2	Sweden	03-2014	
SALTO Follow-up Mission to Borssele 1	2	Netherlands	03-2014	
Pre-SALTO Mission to Borssele 1	2	Israel	03-2014	
Pre-SALTO Mission to Ararat 2	2	Armenia	04-2013	
SALTO Follow-up Mission to Borssele 1	2	Hungary	04-2013	
Pre-SALTO Mission to Borssele 1	2	Belgium	11-2013	
SALTO Mission to Wolsong 1	2	Korea, Republic of	03-2013	
SALTO Mission to Borssele 1	2	Netherlands	03-2012	
SALTO Follow-up Mission to Borssele 1	2	Czech Republic	03-2012	
SALTO Mission to Paks	2	Hungary	05-2011	
SALTO Mission to Kozleberg (Limited report)	2	South Africa	03-2011	
SALTO Follow-up Mission to Borssele 1	2	Netherlands	03-2010	
Pre-SALTO Mission to Borssele 1	2	Korea, Republic of	11-2009	
SALTO Mission to Paks (Limited report)	2	Hungary	11-2009	
SALTO Mission to Paks (Limited report)	2	Hungary	06-2009	
Pre-SALTO Mission to Dukovany	2	Czech Republic	04-2009	
SALTO Mission to Kozleberg	2	Korea, Republic of	07-2007	
Pre-SALTO Mission to Paks (Limited report)	2	Hungary	02-2007	
Pre-SALTO Mission to South Ukraine	2	Ukraine	03-2007	
Pre-SALTO Mission to Kozleberg	2	Ukraine	03-2007	
SALTO Mission to Paks (Limited report)	2	Hungary	12-2006	
SALTO Mission to Paks (Limited report)	2	Hungary	06-2006	
SALTO Mission to Paks (Limited report)	2	Hungary	03-2005	