

# How to



## PREPARE & ORGANIZE IAEA Operational Safety Review Team (OSART) Missions

*OSART missions focus on the safety and reliability of plant operation. An OSART review of a nuclear power plant is based on documents describing the plant and its structures, systems and components; the organization, training and qualification of plant personnel; written procedures applicable to the operation of the plant; interviews and discussions with plant personnel; observations of plant material conditions and operating practices and work in the field; and the records and reports of its operating history. The review focuses on performance in various areas important to safety, the managerial aspects of policy implementation, the control of activities, verification and correction, as well as document control. An OSART review may take place also at a nuclear power project at the critical commissioning phase when many decisions are being taken that will affect operational safety throughout the life of the plant (Pre-operational OSART).*

The OSART mission is a peer review conducted by a team of international experts with direct experience applicable in the technical areas of evaluation. Evaluation of performance is made based on the IAEA Safety Standards. The review is therefore neither a regulatory inspection nor audit against national codes and standards. Instead, it is a technical exchange of experiences and practices at the working level aimed at finding opportunity for strengthening the programmes, procedures and practices at the NPP being reviewed. OSART is a flexible service. The review areas can be tailored according to the request of the host plant. The actual scope of the mission is defined and agreed during the preparatory meeting, which takes place before the mission.

## KEY ISSUES & TIPS

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## Key Objectives of the OSART Mission

Key objectives of an OSART mission are:

- To provide the host plant with an opportunity to review its compliance with the IAEA Safety Standards and identify possible areas for improvement by conducting self-assessment in the preparatory phase prior the mission
- To provide the host country (plant/utility management, governmental authorities and regulatory authority) with an objective assessment of the status of the operational safety with respect to IAEA standards of operational safety at the time of the review
- To provide the host plant with recommendations and suggestions for improvement in areas where performance falls short of IAEA safety standards
- To provide key staff at the host plant with an opportunity to discuss their practices with experts having experience of other practices in the same field
- To provide all Member States with information regarding good practices identified in the course of the review
- To provide experts and observers from Member States and the IAEA staff with opportunities to broaden their experience and knowledge of their own field

An OSART mission can be carried out at any time during the lifetime of a nuclear power plant, after the commencement of construction until the decommissioning of the plant.

## Areas of Interest

1-11+13: For reviews close of the time of commissioning 1-11: for operational plant; 12 for extended operational time	1) Leadership & Management for Safety	1-11+14: For review with extended shutdown 1-11+15: For review with Probabilistic Safety Analysis application
	2) Training and qualification.	
	3) Operations	
	4) Maintenance	
	5) Technical support	
	6) Operation experience	
	7) Radiation Protection	
	8) Chemistry	
	9) Emergency planning and preparedness	
	10) Accident Management	
	11) Interaction of Human, Technology and Organisation (HTO)	
	12) Long Term Operation	
	13) Commissioning	
	14) Transition from Operation to Decommissioning	
	15) Use of PSA for plant operational safety improvements	

## Team Composition

Team Composition: up to 16 experts	<ul style="list-style-type: none"><li>• Team Leader (IAEA Staff)</li><li>• Deputy Team Leader (IAEA Staff) to assist the Team Leader</li><li>• Up to 16 experts (depending on the applied review areas):<ul style="list-style-type: none"><li>» Reviewers are to have a min. of 10 years work experience in the nuclear field and five years of working in a supervisory position</li></ul></li><li>• Up to three Observers</li></ul>	<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 OSART working language (English). Efforts are made to recruit experts from Member States. Experts change for every OSART mission.</p> <p>NO ONE FROM THE HOST COUNTRY'S NATIONALITY IS INCLUDED IN THE TEAM.</p>
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## Preparation of an OSART mission

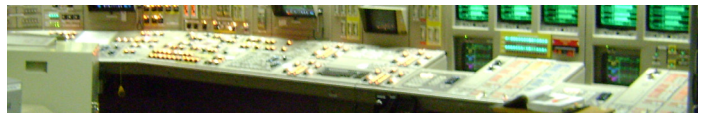
On receipt of a request for an OSART mission, the Team Leader (IAEA Staff) is assigned, to carry out the arrangement of the preparatory meeting with the plant management and other organizations involved at the host country, as well as the recruitment of the external experts for the team, after the preparatory meeting.

### Preparatory Meeting at the Host Country:

- Attended by the Team Leader and the Deputy Team Leader at the plant site
- Takes place approximately 12-18 months prior the actual mission
- Ensures effective review and common understanding of the mission

### Content covered by the preparatory meetings:

- The main features of the OSART programme
- The exact scope of review, reflecting the request of the host plant
- Agreement of the OSART methodology
- Plant management's preparation for the review
- Preparation of the Advance Information Package (AIP) for the team members
- Logistic support required
- Financial arrangements



## During the mission

The OSART review consists of four elements:

- Review of written documents
- Interviews with personnel
- Direct observations of performance, status and activities (on-site and off-site)
- Discussions of evaluations/tentative conclusions with experts

The experts are expected to cover each topic to the extend necessary to be able to make informed judgements.

Note that Security issues are not in the scope of an OSART mission but may be identified during the review and be therefore, brought to the attention of the plant manager.

### Written material

- Documents of general interest are included in the Advance Information Package (AIP)
- Specific documents to a given area that is reviewed is only viewed by the experts responsible and are therefore set out in the appropriate section of the OSART guidelines

### 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 discussion with personnel

- Provides additional information not covered by the written review material
- Answers questions arising from the documentation review
- Forms a judgement and understanding of the arrangements, tasks and responsibilities
- Forms judgement of competences, professionalism and commitment to nuclear safety

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.



## Evaluation criteria

The focus of the OSART mission is on identifying gaps from the internationally accepted IAEA Safety Standards since they represent the largest opportunities for safety improvement at the plant being reviewed. The daily expert meetings, summarizing the concerns, including the perceived strengths and weaknesses, allow for a team discussion and thus provide an objective comparison of the observed plant safety performance with the IAEA safety standards.

## Schedule of the OSART mission

### One day prior the start of the mission

- OSART team training

### First day of the mission (usually Tuesday)

- In the morning: *Entrance Meeting*
- In the afternoon: plant tour, in several groups

### Second day of the mission:

- 08:00 Work start
  - » Individual interviews, observations and discussions with the plant counterparts
- 16:00 Preparation of notes
  - » OSART members prepare their daily notes
- 17:00-18:00 OSART team discussion
  - » OSART team to exchange facts/concerns observed

### Last two days of the mission:

- Completion of the mission's Technical Notes
- Team to establish consensus on all recommendations, suggestions, self-identified issues and good practices

### Last day of the mission:

- In the morning: Exit Meeting
  - » OSART reviewers to present their findings in the respective review area
  - » Agreement on the OSART follow-up mission
  - » Upon organization by the plant, a press conference may take place

## Reporting

During the course of the review, and after each evening meeting, each team member is to write detailed *Technical Notes* on the observations and conclusions made. The *Technical Notes* are considered "field notes" of the respective expert and are therefore restricted documents. Each recommendation and suggestion contained in the *Technical Notes*, is referenced to the relevant requirement of an IAEA Safety Standard.

On completion of the review, the team leader is to prepare the OSART report, based on the established *Technical Notes*. This is an official IAEA document, which summarizes the team's main observations and conclusions, including all recommendations, suggestions and good practices.

Before the text is finalized, the utility and regulatory authority concerned are given the opportunity to offer comments.



## Exit Meeting

At the *Exit Meeting*, the team leader presents a briefing on the outcome of the mission and hands over a copy of the Technical Note to the plant manager. The *Exit Meeting* provides opportunity for each team member to formally present each issue to the plant. The *Exit Meeting* marks the completion of the OSART mission at the host country.

## OSART follow-up mission

After 12-18 months of the initial OSART mission a follow-up evaluation is conducted. During the follow-up evaluation, a team of about four persons (of the original OSART team), including the team leader and deputy team leader, ranks the actions taken by the plant and effectiveness of its implementation as follows:

### Issued resolved

- All necessary actions have been taken to deal with the root cause of the issue rather than to just eliminate the examples identified by the team

### Satisfactory progress to date

- Actions have been taken, including root cause determination, which lead to a high level of confidence that the issue will be resolved in a reasonable time frame

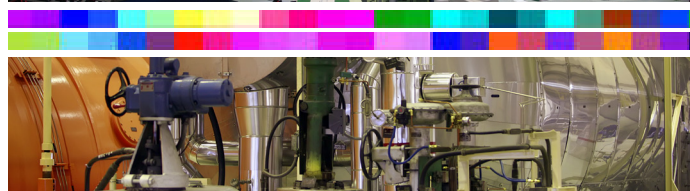
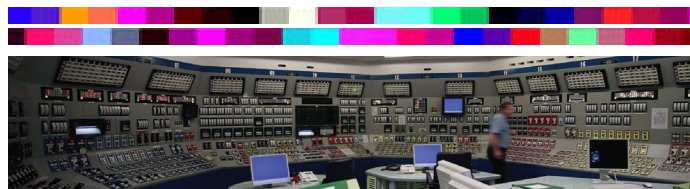
### Insufficient progress to date

- Actions taken or planned do not lead to the conclusion that the issue will be resolved in a reasonable time frame

## Follow-up mission reporting

The word document of the original report is amended by the addition:

- At the end of the INTRODUCTION AND MAIN CONCLUSIONS section, adding a section entitled "[Plant Name] Follow-up main conclusion (Self-Assessment)" which the plant completes prior the mission and a section entitled "OSART team follow-up main conclusions" which the team leader completes at the end of the follow-up mission
- At the end of each issue after the IAEA Basis, chapters entitled "Plant Response/Action" (plant to complete prior the mission); "IAEA comments" (follow-up team members to complete after review); and "Conclusions" (upon consensus opinion of the team on the extend of resolution of the issue by the plant)

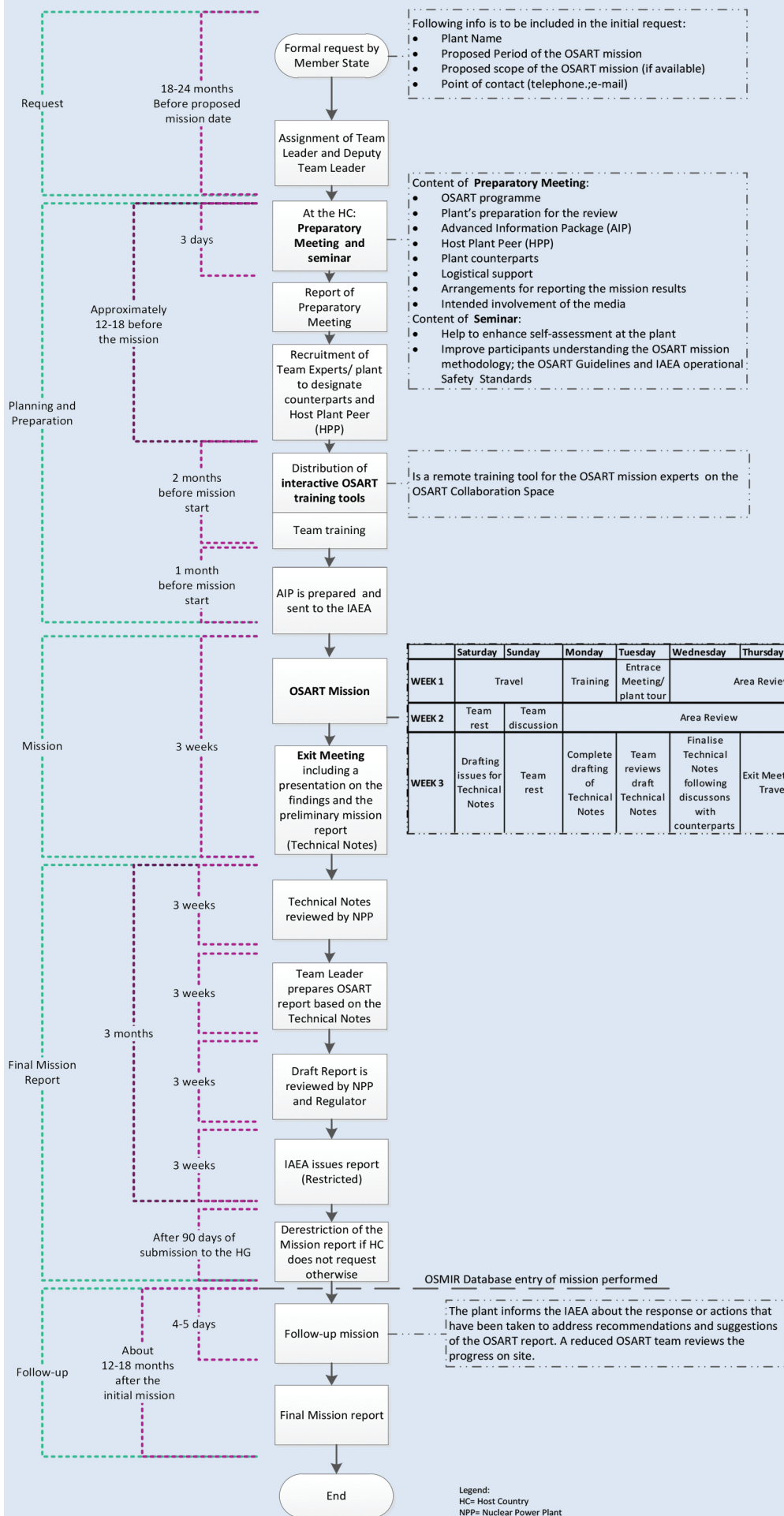


## OSART Mission Results (OSMIR) Database

After the original mission and the de-restriction of the OSART report, the findings of the mission will be incorporated into the OSART MISSION RESULT (OSMIR) database. The OSMIR database covers findings from all OSART missions and follow-ups conducted. The OSMIR database contains:

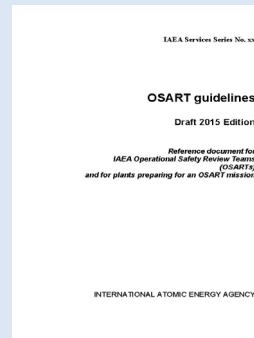
- **Background-information**
  - » Details of the plant under review, including name, country, type and size
- **Mission results**
  - » Identified strengths categorized by review area and according to significance
- **Follow-up results**
  - » Including a description of planned or completed remedial actions

## OSART mission process flowchart



## Reference material

### OSART Guidelines



The OSART guidelines are available at:  
[NS Intranet](#) | [How to](#) | [Core Processes](#)  
 and  
[ns-iaea.org](#) | [Technical Areas](#) | [Nuclear Installations](#) | [Operational Safety](#)