OSART - LECTURE OBJECTIVES

- GENERAL BACKGROUND
- PURPOSE
- MISSION TYPES
- FOLLOW UP VISITS
- THE PROCESS
- EVALUATION CRITERIA
- REPORTING RESULTS
- FUTURE OUTLOOK

12.2.1

OSART PROGRAMME - History

ACTIVITIES

August 1983 - to date

100 missions: 71 plants: 30 countries

- **58 OSART missions to operational plants**
- **17 OSART missions to plants under construction/commissioning**
- **13 joint safety review missions (design and operational safety)**
- **12 technical exchange missions**

41 follow-up visits

12.2.2

OSART PROGRAMME - History

Year	Mission Type and Total					F/up
	OSART	Pre-OSART	SRM	TEM	Total	
Prev.	29	9	-	2	40	4
1990	3	4	-	2	9	4
1991	4	-	4	2	10	5
1992	4	1	-	1	6	5
1993	2	3	1	-	6	5
1994	4	-	2	-	6	7
1995	5	-	3	1	9	3
1996	3	-	3	1	7	5
1997	4	-	-	3	7	3
Totals	58	17	12	12	100	41

12.2.3

OSART PROGRAMME - 1996

FS	Kozloduy 1/4, Bulgaria	15-19 January
FS	Bohunice 1/2, Slovakia	6-9 May
S	Temelin, Czech Republic	11-15 March
FO	Flamanville, France	3-7 June
FO	Hamaoka, Japan	10-14 June
S	Khmelnitski 2, Ukraine	10-14 June
S	South Ukraine, Ukraine	8-19 July
O	Bohunice 3/4, Slovakia	9-27 September
O	Daya Bay, China	7-25 October
T	Chashma, Pakistan	13-17 October
FO	Leibstadt, Switzerland	11-15 November
O	Dampierre, France	11-29 November

F=Follow-up Visit
O=OSART Mission
S=Safety Review Mission
T=Technical Exchange Mission

12.2.4

OSART PROGRAMME - 1997

O	Quinshan, China	13-31 January
O	Laguna Verde, Mexico	10-28 February
FS	Novovoronezh 5, Russia	17-21 March
FO	Ignalina, Lithuania	2-6 June
T	Kazakhstan	10-16 August
O	Yonggwang 1/2, Korea, Rep. of	18 Aug-5 September
T	China	5-17 October
T	Mexico	15-17 October
FS	Kola, Russia	24-27 November
O	Embalse, Argentina	17 Nov-4 December

F = Follow-up Visit
O = OSART Mission
T = Technical Exchange
S = Safety Review Mission

12.2.5

OSART PROGRAMME - Planned 1998

O	Paluel, France	12-29 January
FO	Beznau, Switzerland	16-20 February
FO	Bohunice, Slovakia	2-6 March
O	Asco, Spain	18 May - 5 June
O	Kazakhstan	
O	Kozloduy, Bulgaria	
O	Ukraine (to be confirmed)	
O	Golfech, France	
FO	Daya Bay, China	
FO	Dampierre, France	
FO	Laguna Verde, Mexico	
FO	Khmelnitzki, Ukraine	
FO	Qinshan, China	
PO	Temelin, Czech Republic	5-26 October
PO	Chansnupp, Pakistan	
S	Zaporozhe, Ukraine	

F = Follow-up Visit O = OSART Mission PO = Pre OSART

12.2.6 T = Technical Exchange S = Safety Review Mission

OSART PROGRAMME - Introduction

Purpose

- **To assist Member States in enhancing the operational safety of individual plants**
- **To promote the continuous development of operational safety within all Member States by the dissemination of information on good practices**

12.2.7

OSART PROGRAMME - Introduction

Objectives

- **Provide an objective assessment of some key operational safety areas with respect to proven international performance and practices.**
  - **providing written recommendations where performance or practices should be improved**
  - **providing written suggestions where performance could be enhanced**
  - **identifying good practices**

12.2.8

OSART PROGRAMME - Introduction

Objectives (cont.)

- By exchange of information and experience between team members and plant counterparts to
  - provide plant with informal assistance and advice
  - broaden team members' experience and knowledge
  - train team members in a review methodology that will enhance their management skills
- Disseminate information of OSART missions including good practices to all Member States

12.2.9

OSART PROGRAMME - Introduction

Customers

Government

- Mission invited by host country government
- Results reported to host country government
- Results normally released to public

Plant

- Receives safety improvement proposals
- May seek improved public credibility from international review
- Receives external follow-up on improvement actions

Industry

- Receives database information on improvement proposals and strengths from other plants
- Results influence IAEA documents and programmes

12.2.10

OSART PROGRAMME -Introduction

ASSESSMENT OF OPERATIONAL SAFETY

What it does not do

- Does not assess design adequacy
- Does not assess the overall safety status of a plant
- Does not assess against national regulatory requirements
- Does not rank operational safety performance of the host plant in comparison with other plants

12.2.11

OSART PROGRAMME - Structure and Scope

Scope of review

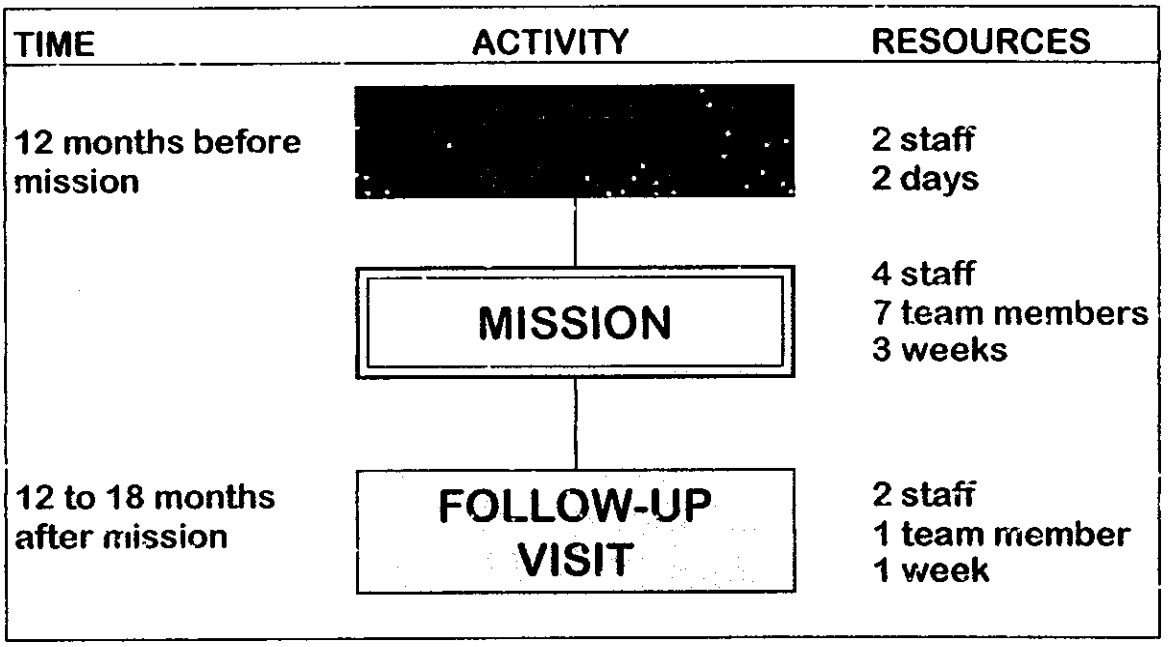
- **Management, organization and administration**
- **Training and qualification**
- **Operations**
- **Maintenance**
- **Technical support**
- **Radiation protection**
- **Chemistry**
- **Emergency planning and preparedness**

Review of safety culture is an integral part of the review of each area

12.2.12

OSART PROGRAMME - Structure and Scope

OVERALL CONCEPT



12.2.13

OSART PROGRAMME - History

SOURCE OF TEAM MEMBERS

August 1983-August 1997

OSART Missions

• IAEA staff	296 man-missions
• External members	549 man-missions
• Observers	152 man-missions

Follow-up visits

• IAEA staff	69 man-missions
• External members	39 man-missions
• Observers	3 man-missions

12.2.14

OSART MISSION - Roles and responsibilities

Team Composition

- Team leader, assistant team leader and nine operational safety reviewers
- Cumulative nuclear experience normally over 250 years
- Target team mix
  - one-third first time reviewers
  - one-third previous external reviewers
  - one-third IAEA staff
- Typically up to three observers from countries which have developing nuclear power programmes

12.2.15

OSART PROGRAMME - Methodology

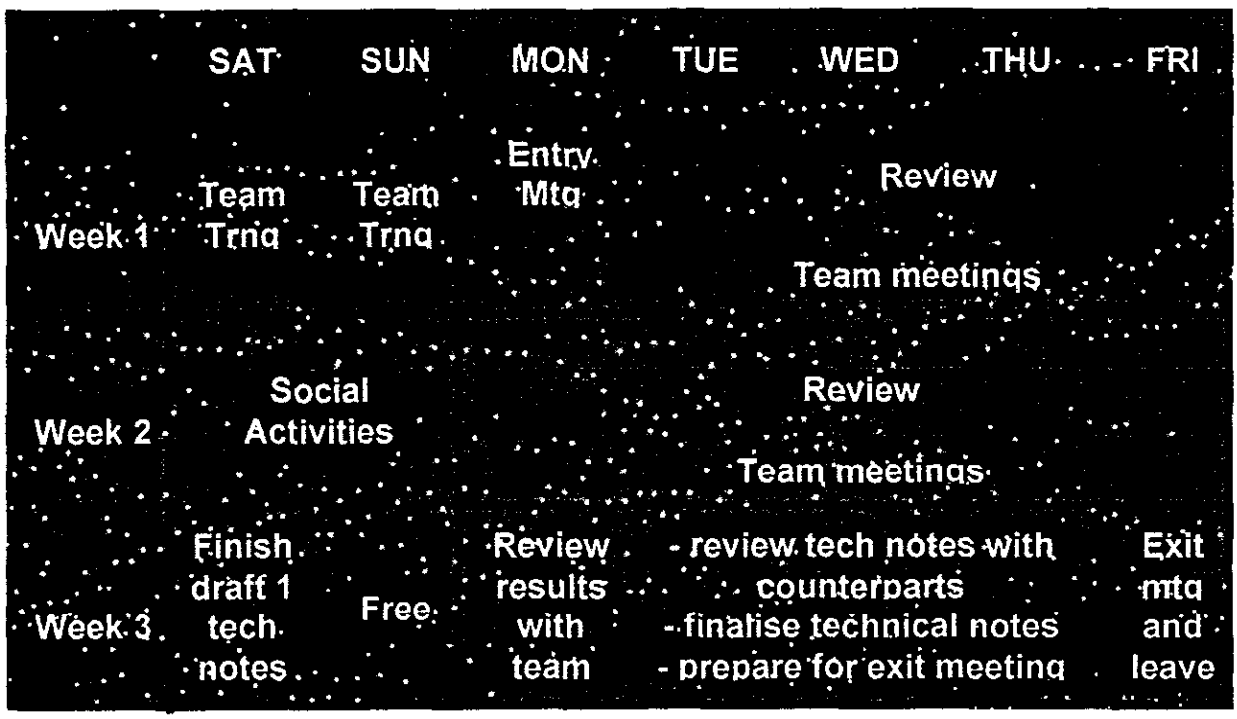
Elements

- General review principles
- Daily preparation
- Counterpart involvement
- Programme review
- Field review
- Observation techniques
- Safety culture
- Identifying issues
- Definitions

12.2.16

OSART PROGRAMME - Structure and Scope

OSART Mission Schedule - Overview



12.2.17

OSART PROGRAMME - Methodology

Identifying Issues

The degree of acceptability of findings is as follows:

BEST	**Performance based** **- problems at the plant**
GOOD	**Programme based** **- international experience**
Acceptable	**Programme based** **- reviewer's national or local experience**

12.2.18

OSART PROGRAMME - Methodology

Identifying Issues (cont.)

- **Performance based issues include:**
  - **events, incidents, near misses**
  - **sub-standard work activities**
  - **human errors**
  - **unreliable equipment/equipment unavailability**
  - **poor plant material condition**
  - **poor housekeeping**
  - **ineffective use of procedures**

12.2.19

OSART PROGRAMME - Methodology

Identifying Issues (cont.)

- **Programme based - international experience:**
  - **missing, incomplete or deficient programmes based on international experience**
  - **no observed performance problem**
  - **international experience indicates that performance problems are likely to occur**
  - **cultural differences and local programmes may partially compensate**

12.2.20

OSART PROGRAMME - Methodology

Identifying Issues (cont.)

- **Programme based - reviewer's national of local experience:**
  - **same as for international experience but based on experience of one or two reviewers**
  - **not recognized international experience**
  - **needs team consensus on applicability of reviewer's national or local experience**

12.2.21

OSART PROGRAMME - Methodology

Definitions

Recommendation

A recommendation is advice on how improvements in operational safety can be made in the activity or programme that has been evaluated. It is based on proven, good international practices and addresses the root causes rather than the symptoms of the issue. It very often illustrates a proven method of striving for excellence which reaches beyond minimum requirements. Recommendations are specific, realistic and designed to result in tangible improvements.

12.2.22

OSART PROGRAMME - Methodology

Definitions (cont.)

Suggestion

A suggestion is either an additional proposal in conjunction with a recommendation or may stand on its own following a discussion of the pertinent background. It may indirectly contribute to improvements in operational safety, but is primarily intended to make good performance more effective, to indicate useful expansions to existing programmes or to point out possible superior alternatives to ongoing work. In general, it is designed to stimulate management and supporting staff to continue to consider ways and means for enhancing performance.

12.2.23

OSART PROGRAMME - Methodology

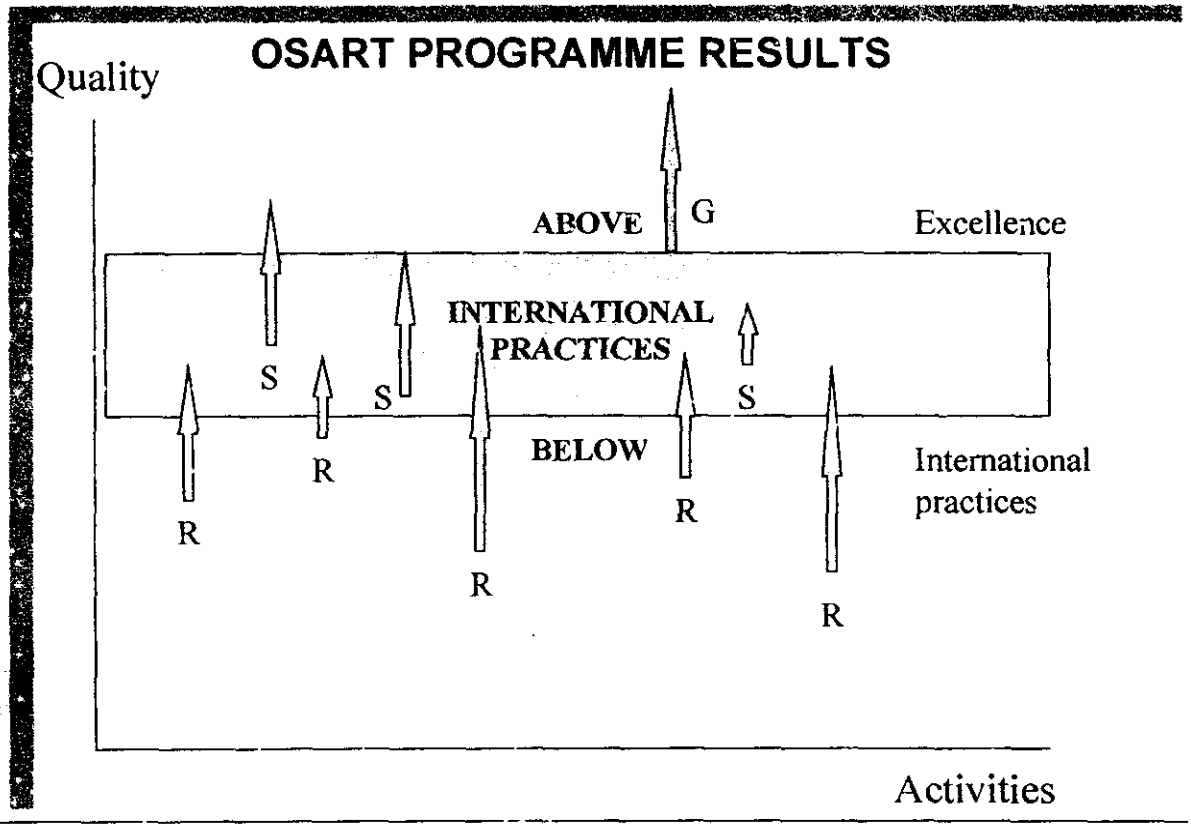
Definitions (cont.)

Good Practice

A good practice is a proven performance, activity or use of equipment, which the team considers to be markedly superior to that observed elsewhere. It should have broad application to other power plants and be worthy of their consideration in the general drive for excellence.

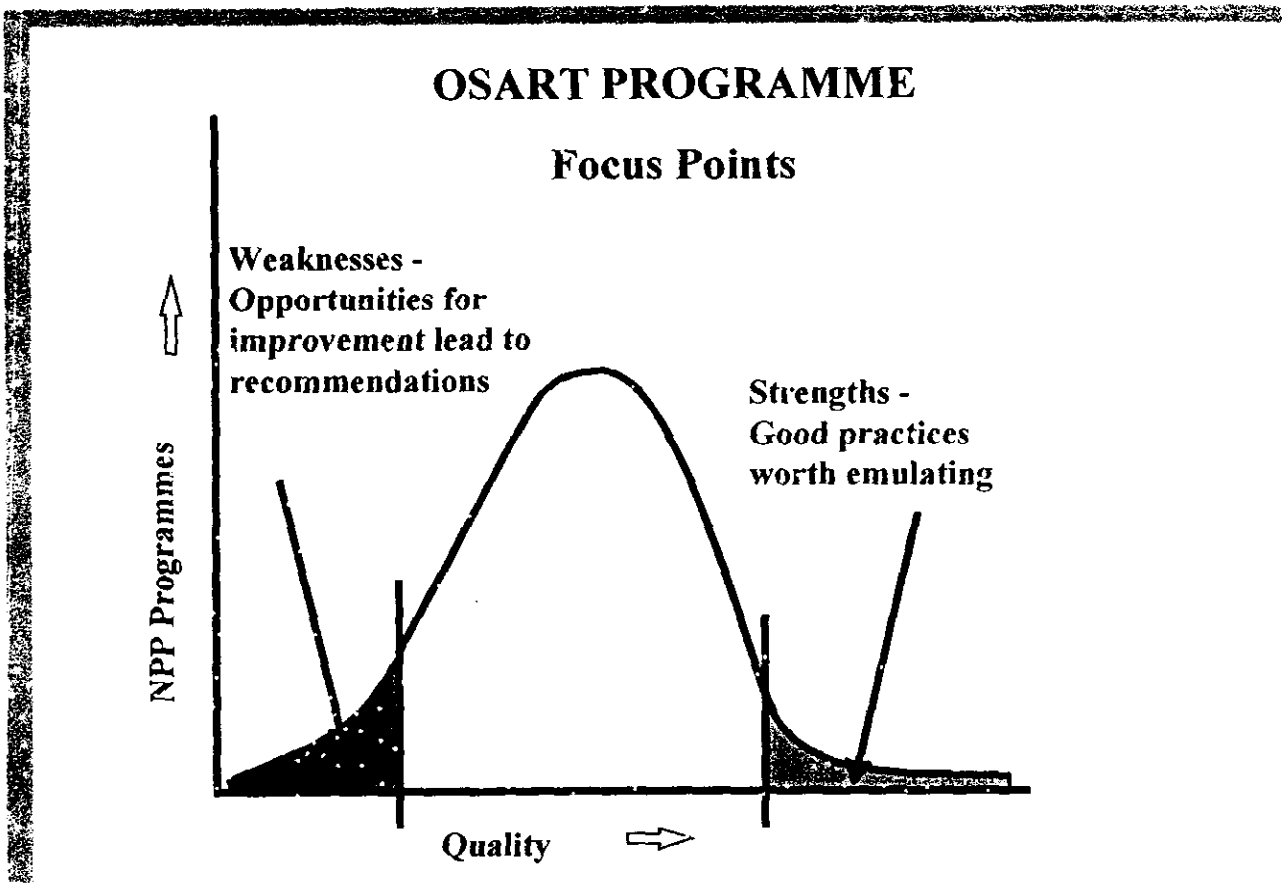
12.2.24

OSART PROGRAMME- Methodology

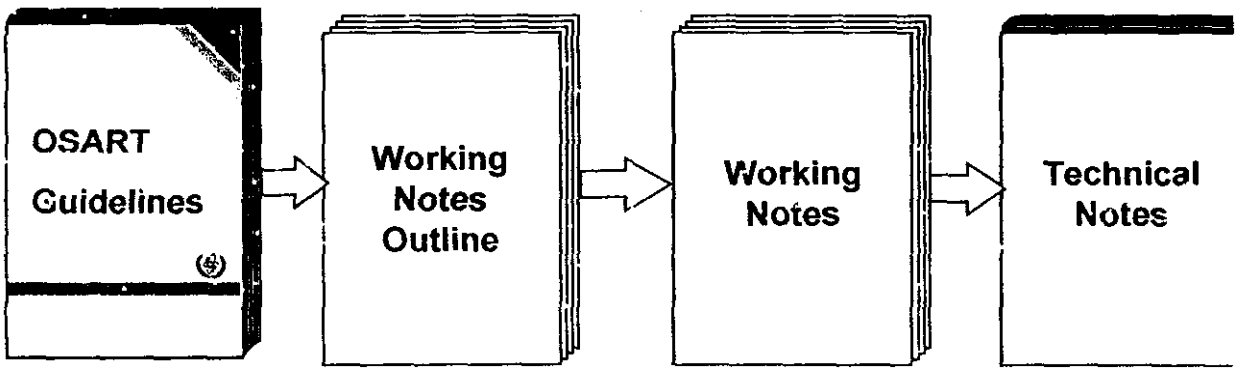


12.2.25

OSART PROGRAMME - Methodology



OSART PROGRAMME - Reporting Results



- Structure and Guidance for OSART Mission

- Extracted from Guidelines
- Structure for team members to document their review

- Documented assessment of performance by team members
- Written daily
- Develops into Technical Notes

- Overviews, Issues, Recom'd'ns, & Sug'st'ns in final form
- Provided to plant

12.2.27

OSART ADVISORY SERVICE

EFFECTIVENESS
Status of Issues at Follow-up Visits

Years (Visits)	Resolved %	Satisfactory Progress %	Insufficient Progress %	
1989/90 (6)	40	43	14	
1991/92 (10)	43	38		
1993/4 (11)	41	41		
1995/6 (4)	60	34		

12.2.28