

Plant personnel training weaknesses identified through WANO programmes

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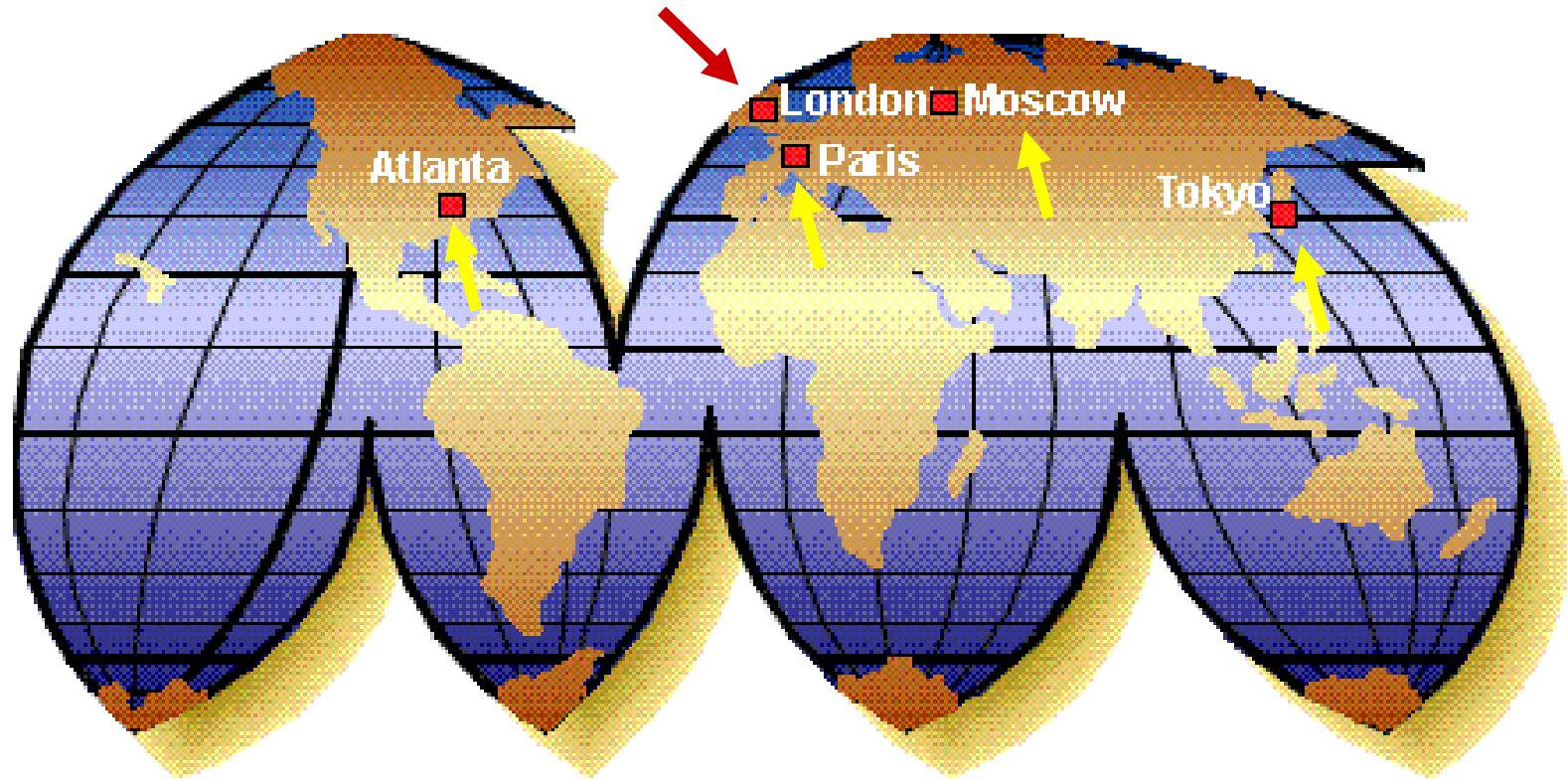
2. Plant personnel training weaknesses



1. WANO Programmes.

WANO

Geographical distribution



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WANO Mission

To maximise the safety and reliability of nuclear power plants worldwide by working together to assess, benchmark and improve performance through mutual support, exchange of information and emulation of best practices.



WANO Programmes

Four Programmes Define WANO Member Support

- 1. Operating Experience Programme**
- 2. Peer Review Programme**
- 3. Professional and Technical Development Programme**
- 4. Technical Support and Exchange Programme**



Operating Experience Programme

The objectives are:

- **To encourage members to report events promptly with a plant analysis valuable to its members**
- **Alert members to events so they can take actions to prevent similar events at their own plants**
 - ➔ **Using Operating Experience is a proven method to improve plant performance by applying the applicable lessons learned from past events**



Peer Review Programme

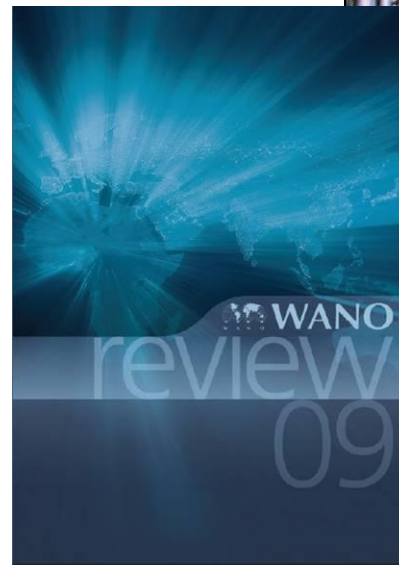
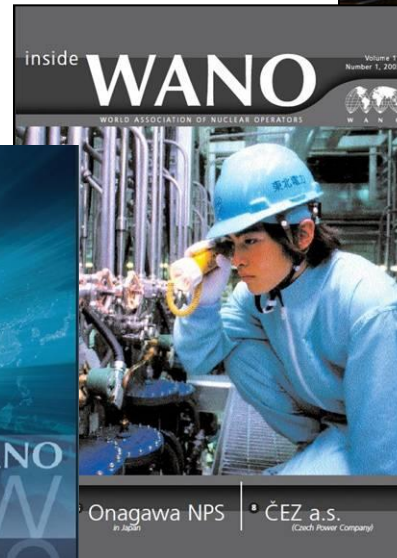
- **The purpose of a WANO Peer Review is to:**
 - ➔ **Compare the operational performance of a station to standards of excellence through an in-depth, objective review by an independent team**
 - ✦ **The review compares station performance to the standards of excellence, as defined by the WANO Performance Objectives and Criteria**
 - ➔ **Be a performance-based review which asks, 'Can this be done better?'**



Professional & Technical Development

Includes:

- ➔ Seminars and Workshops
- ➔ Training
- ➔ Communications



Technical Support and Exchange

Three types of activities together comprise the Technical Support and Exchange Programme

- **Technical support missions**
- **Performance Indicators**
- **Guidelines and good practices**



2. Plant personnel training weaknesses

New unit/plant personnel training weaknesses

Conduct of training

Effectiveness of simulator training is limited because of considerable discrepancies resulting mainly from incorrect model response.

- Some scenarios cannot be implemented for training due to unrealistic response of the model.
- Prompt correction of critical simulator deficiencies is impossible because no simulator modelling engineers are available on site.



New unit/plant personnel training weaknesses

Conduct of training

Training facilities and human resources allocated for plant personnel training do not always ensure efficiency of the training.

- A scope of classroom facilities does not fully meet plant training needs.**
- The number of instructors is not sufficient to cover needs in training on basic safety topics.**
- A scope of labs used for basic training is not sufficient.**



New unit/plant personnel training weaknesses

Conduct of training

Existing organization and conduct of maintenance personnel training does not ensure receiving skills on maintenance work, therefore it does not always guarantee required level of maintenance personnel qualification.

- Training in maintenance field is not skill - based.**
- Maintenance training facilities were not designed at the stage of the TC construction.**



New unit/plant personnel training weaknesses

Training personnel knowledge and performance

Neither Training Centre (TC) instructors nor staff invited as trainers from the field receive special training in instructor skills and knowledge.

- Experience in the subject matter may not always be effectively transferred to trainees.
- Instructor techniques demonstrated during simulator training sessions do not ensure realistic training environment and objective evaluation.



Plant personnel training weaknesses

Conduct of training

Implementation of several training activities does not always correspond to the latest international practice.

- Training is not always presented as outlined in approved training materials.
- Some training principles are not fully implemented for training. For example, using the trainees' assessment techniques, using active methods of training (discussion) and observing trainees' behavior (during simulator training) is not done.



Plant personnel training weaknesses

Conduct of training

The training materials used to support training activities, are not always adequate, well organized, current and readily accessible.

- In some cases the training materials do not meet completely the requirements for high level standards of training performance.
- Some training materials do not contain learning objectives or contain learning objectives developed incorrectly.



Plant personnel training weaknesses

Training personnel knowledge and performance

Insufficient instructor skills in, for example, material preparation, communication, debriefing after training and use of human performance techniques, results in a decrease in the effectiveness and quality of training.

- Instructor initial training deficiencies
- Instructor refresher training deficiencies
- Instructor's performance gaps are not identified and evaluated.
- Insufficient support from line-managers.



Plant personnel training weaknesses

Training approach

The training system does not systematically review the outputs from the plant and industry evaluation practices (e.g. operating experience, self assessments and benchmarking) to determine where training may be applied to achieve performance improvement.

- Training is not identified as a prime contributor to performance improvement.
- There is no process for the analysis of training needs from available performance data.



Plant personnel training weaknesses

Training approach

Plant managers and supervisors do not routinely monitor training process nor do they conduct periodic evaluations of the training efficiency.

Management and supervisory employees do not attend training sessions for subordinate employees including full-scale simulator training or do this very rarely thereby violating the existing training supervision schedules. Hence, managers and supervisors miss the opportunity of evaluating the efficiency of training provided to subordinate employees or updating the training process as necessary.



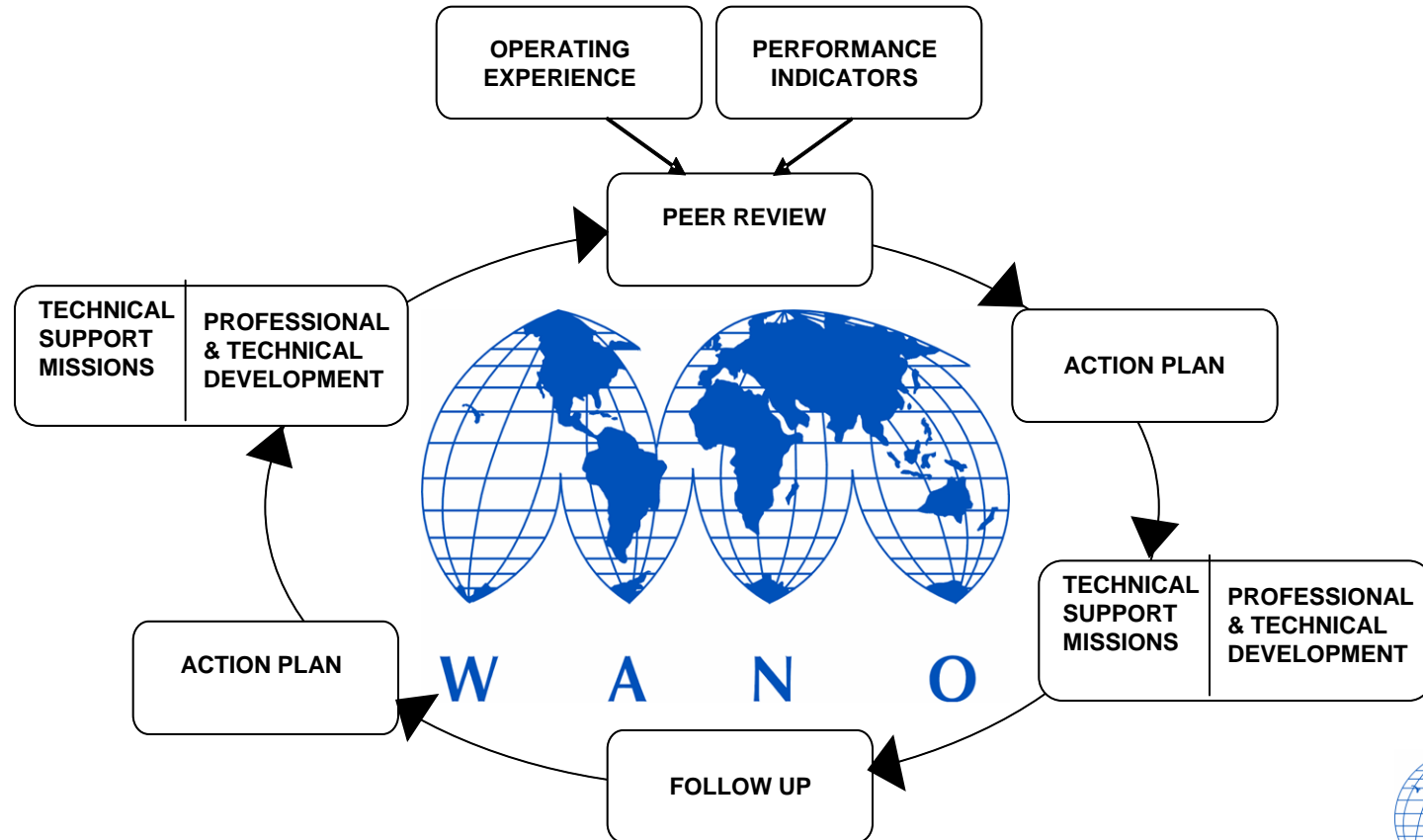
New Requirements for Training

- **A Fukushima accident identified the need for accident mitigation training along with accident prevention training.**
- **Insufficient operating experience feedback results in recurrence of significant events.**
- **Fast-growing nuclear industry.**
- **Plant decommissioning.**
- **Ageing, plant life extension and power uprates**
- **New generation of nuclear staff succeeding the first-generation of nuclear staff**



Programme Relationships

The programmes work together to drive continuous performance improvement



WANO

THANK YOU

