

Työterveyslaitos

VTT

PARTICIPATIVE DEVELOPMENT IN THE NUCLEAR INDUSTRY

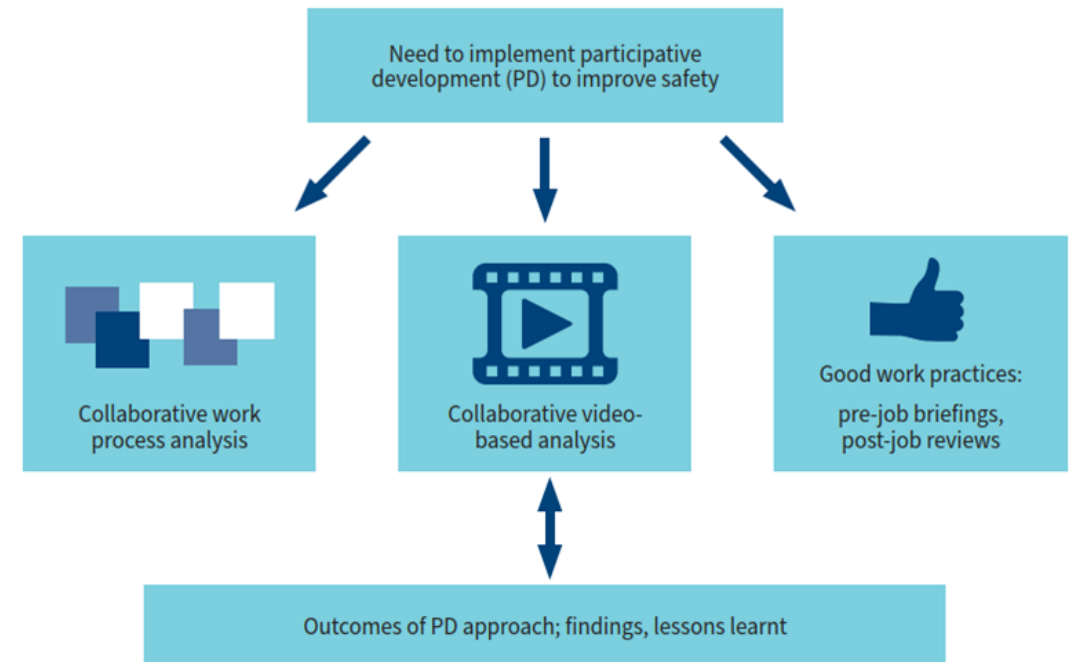
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Why Participative Development (PD) in the nuclear industry?

- Highly proceduralized, and technology intensive industry
- Aging personnel and technology
- Modernization
- A context of "new interest" to the nuclear industry' at the postnormal age with sustainability requirements.
- New ways to improve safety are needed, to:
 - get **people heard**
 - find out **weak signals** contributing to safety
 - develop **new ways to learn**
 - tune **work practices**



Video-based method for collaborative learning

Basic idea: To record the NPP workers in action and make them watch the videos for learning and development purposes.

People are visible in the video, voice is also recorded. Video is watched in a guided group session.

Strengths	Challenges & requirements
The video-method provides viewpoints that are hard to acquire anywhere else. Video material effectively reveals what could be improved.	Analysis: Careful selection of a suitable task (safety-critical & complex) and suitable video material.
Method can be used for various purposes: work preparation, work reflection, training, development.	Technical: Suitable equipment, recording and video-editing competence.
Method can be utilised both in real situations and in simulator training.	Organizational: Privacy (consent), processes & procedures, method's ownership, workload.
Possibility to support pre-job briefing and post-job review practices (HU tools).	Worker viewpoint: Fear of being filmed.

Organizational learning and documentation practices in pre-job briefings and post-job reviews

- We studied the **documentation practices** concerning pre-job briefings and post-job reviews

Highlights

- **Documentation medium** (open feedback field or minutes of meeting) affects what is documented and whether the recorded information is used afterwards
- The documentation can serve **multiple functions for different stakeholders**: it helps perform the same task again in the future, but can also be useful for training, supervision and oversight, and operating experience

Success factors

- Management support
- The purpose of the documentation is defined and communicated
- Coordinating supervisors' ownership and awareness is ensured
- Other stakeholders and their interests are identified
- Expectations and instructions for using open feedback fields are clear
- Tools used for documentation are effective and easy to use
- Storage medium choice facilitates organizational learning

Collaborative Work Process Analysis (CWPA)

- **modelling the entity of work processes and critical points to human contribution** helped to recognize and handle
- **information flow, best practices and tensions** between actors or issues, that might not become visible during everyday operations
- raise up **development needs** and taking them as further actions
- a way for the **personnel to take an active developer role** at work
- to involve **different levels of the organization** in the NPP, often felt as challenging.



Modelling: making invisible visible

Factors to be considered

1. Take **positive aspects** before moving to more sensitive issues
2. Appropriate case selection to meet the **needs of NPP**
3. The **role of inner HF-/safety experts**, to facilitate implementation → professional competence and commitment of management.
4. Does **nuclear industry culture support** use of this kind of method?

Discussion

- **Benefits of studied methods:**
 - open views that might otherwise remain latent
 - serve several functions; learning, developing, supervision, OE analysis, lessons learnt for future
 - support the existing nuclear safety procedures
 - raise up success factors and best practices
- **Challenges, issues to be considered:**
 - careful selection of a suitable task/work process
 - organisational factors, e.g., workload, commitment of personnel incl. management, industrial culture, competence and resources



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Kiitos! Thank you!

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