



## Regulatory Applications of French Operating Experience

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ASN

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## Contents of the presentation

- Operating experience feedback for NPPs:
  - Specificity of the french fleet
  - Main features
  - Advisory committee of experts
  - International input
  - Significant domestic events
- OEF for medical domain: the case of radiotherapy
  - Regulation
  - Information
  - Sharing OEF
- Perspectives and concluding remarks

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## Operating experience feedback for NPPs Main features

- Events notified by licensee to ASN according to criteria defined in ASN guide (available on [www.asn.fr](http://www.asn.fr)) : i.e. in 2010 EDF declared 717 significant events to ASN
- In 2010, 74 significant events rated at level 1 of the INES scale and subject to a public information, 1 rated at level 2
- Events analysis reviewed by ASN and IRSN
- Quarterly review meeting with ASN, IRSN and EDF
- Analysis of OEF by the Advisory committee of experts on a three-year basis
- International OEF taken into account (outlined by IRRS mission)



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 **Operating experience feedback for NPPs**  
Advisory Committee of Experts

- Periodical review of 3-years period OEF
- In 2011, the Advisory committee of experts analysed OEF concerning the period 2006-2008, with the support of IRSN
- Topics selected on the basis of regular OEF review processes (weekly, quarterly, on a case by case basis...)
- General OEF topics : safety, radiation protection, protection of the environment, ...
- Specific topics : administrative lockout, requalification after maintenance, steam generators non compliances...

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 **Operating experience feedback for NPPs**  
International input

- Special attention is given to international feedback
- Immediate exchange of information
- Quarterly review meeting with ASN, IRSN and EDF
- AC meeting: the following events were looked at:
  - Ringhals december 6th 2005:property issue
  - Kozloduy march 1st 2006:blockage of control rod
  - Forsmark july 25th 2006:loss of electrical power
  - Kashiwazaki july 7th 2007:seism of magnitude 6,6
  - Doel november 1st 2008: resins in the primary circuit

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 **Operating experience feedback for NPPs**  
Advisory committee of experts

- Outcome of the Advisory committee of experts : conclusions and 10 recommendations provided to ASN
- Example of recommendations provided to ASN by the Advisory Committee:
  - To include into safety studies the representatives characteristics of new steam generators
  - To draw the list of equipment which are frequently submitted to administrative lockout, in order to modify those concerned by regular non-compliances
- ASN is currently analysing outcomes and will send requests to the licensee

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**asn** **Operating experience feedback for NPPs**  
**Significant domestic events**  
*Accidental exposure of a worker*

**Event**

- Accidental exposure of an employee of a EDF subcontractor
- During cleaning operations of the fuel pool, a worker picked up with his hand a piece generating high levels of radiation



- Exposure of the worker's hands exceeded the statutory annual dose limits
- The over-exposed worker did not show deterministic effects.
- This exposure was due to an inadequate risk analysis and to the lack of procedures to manage the presence of foreign pieces at the bottom of the pool.

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**asn** **Operating experience feedback for NPPs**  
**Significant domestic events**  
*Accidental exposure of a worker*

**ASN actions**

- Inspection at Chinon NPP :
  - Inadequate risk assessment performed at the preparation phase
  - Inefficient reaction to the event
  - Inadequate internal surveillance

**EDF actions**

- Procedure improvements (i.e. set up a break point for transmission of the radiological area mapping realized by the subcontractor to the operator)
- Surveillance improvements (i.e. the management of the risk of extremities exposures must be integrated from the preparation phase)

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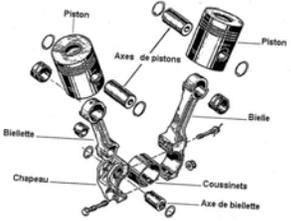
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**asn** **Operating experience feedback for NPPs**  
**Significant domestic events**  
*Back-up diesel generators*

**Event**

- Anomaly concerning back-up diesel generator
- Premature wear on bearing bushing (mechanical components designed to minimize friction between moving parts of back-up diesel generators)

- 19 reactors concerned (event rated at level INES 1)
- On reactors 3 and 4 to Tricastin NPP, the two back-up diesel generators and the additional back-up diesel generator are impacted (event rated at level INES 2)



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**asn** **Operating experience feedback for NPPs**  
**Significant domestic events**  
**Back-up diesel generators**

**EDF actions**  
 •Corrective action plan (installation of new bearings bushing, new operating procedure)

**ASN actions**  
 •EDF corrective action plan under analysis  
 •Inspection at Tricastin NPP

**900 MWe NPPs back-up diesel generator**



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**asn** **Operating experience feedback for medical domain**

**•ASN in charge of radioprotection since 2002**

**•First inspectors on radioprotection for patients 2006**

**•Several major events:**

- Epinal (radiotherapy)
- Toulouse (stereotaxy)
- Strasbourg (interventionnal radiology)

**•Output:**

- Regulations
- Informations
- Sharing of

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**asn** **Operating experience feedback for medical domain**  
**Regulations**

**•Reinforcement of national regulations**

- ASN decision on quality assurance (2008)

**•Circular letters to professionals**

- Radiotherapy
  - Regulations (2005)
  - Organizational and Human Factor (2006)
  - Portal imaging (2007)
  - Calibration of very small beams (2007)
- Interventionnal radiology
  - Regulations (2009)

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**asn** **Operating experience feedback for medical domain**  
Information

- **To the public**
  - **Definition of an event scale for radiotherapy events**
  - **Publication of reports and event notices**  
([www.asn.fr](http://www.asn.fr))
- **To the professionals**
  - **Guides for Professionals**
    - **Radiotherapy**
    - **Events notification ((2007 and 2010)**
    - **Quality assurance (2009)**
    - **Risk analysis (2009)**

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**asn** **Operating experience feedback for medical domain**  
Sharing OEF

- **General assessments**
  - **ASN-AFSSAPS assessments (patient radiotherapy events)**
  - **Quarterly assessment for events classified at level 1 of ASN/SFRO Scale**
- **Newsletter for Professionals March 2011**  
**Mistaken identity of patient**
- **International conference in december 2009**  
**Safety in radiotherapy**

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**asn** **Perspectives and concluding remarks**

- **OEF is and stays the cornerstone of operational safety in all the domains**
- **Efficiency of the OEF relies on**
  - **adequate balance between reporting time and analysis deepness**
  - **full cooperation nationally and internationally**
  - **open attitude**
- **OEF is pedagogical and must be shared with the public**

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