

Combined Nuclear Security and Safety Culture Self-assessments in NPPS

Practical experiences of combined nuclear security and safety culture self-assessment in Nuclear Power Plants in Hungary (2015, Paks) and Canada (2016, Bruce Power, Ontario)

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IAEA's Nuclear Security Culture



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Nuclear Security - Measures to Protect Against Nuclear Terrorism

Report by the Director General

Summary

- At its meeting in March 2002, the Board of Governors considered the report entitled *Protective Against Nuclear Terrorism: Specific Proposals* (GOV/2002/10) and approved, in principle, the proposals for Agency activities in the area of nuclear security. The Board requested that the Director General should report periodically on progress made in implementation of the proposals and the funding thereof. This report has been met by reports GC/47/17, GOV/INF/2004/1, GOV/2004/50-GC/48/6 and GOV/2005/50 successively. At its meeting in September 2005, the Board of Governors expressed its support for a new Nuclear Security Plan 2006-2009 (GOV/2005/50), looked forward to a progress report on its implementation and expressed the view that the Secretariat could issue an annual report. The 49th General Conference also encouraged (GC/49/RES/10) the Agency to prepare an annual report highlighting significant accomplishments of the prior year and establishing goals and priorities for the year to come. This report fulfils these requirements by providing a review of activities and achievements over the past year and also trends and priorities for the future.

Recommended Action

- It is recommended that the Board of Governors:
 - Takes note of the Director General's report on Nuclear Security — Measures to Protect against Nuclear Terrorism;
 - Calls upon Member States to continue contributing, on a voluntary basis, to the Nuclear Security Fund (NSF), which was established by the Board in March 2002 as a sub-fund of the Extra Budgetary Programme Fund of the General Fund.

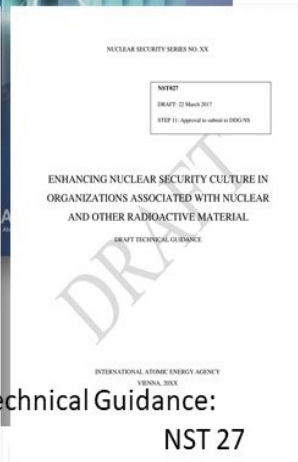
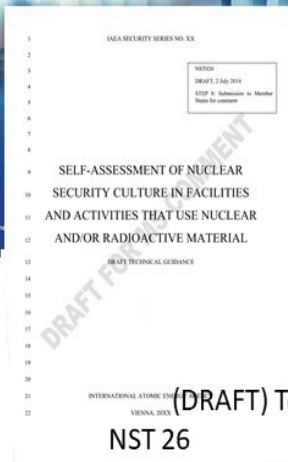
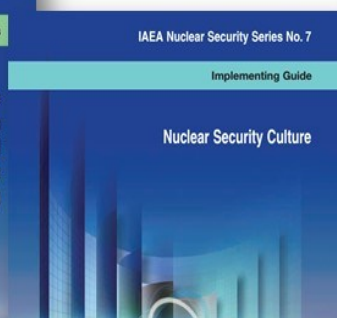
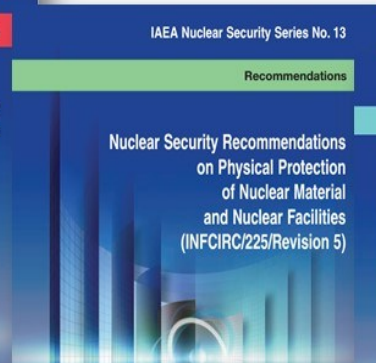
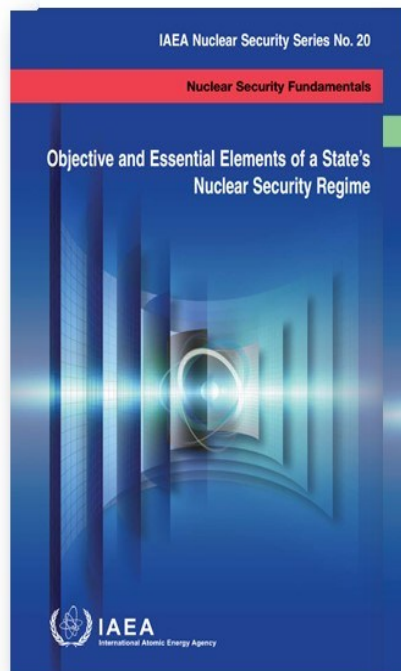
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FUNDAMENTALS:
NSS 20

Recommendations:

NSS 13

Implementing Guide
NSS 7



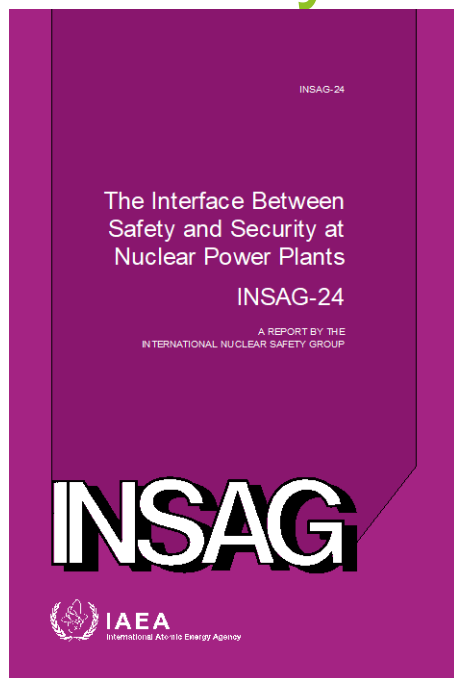
International Conference on Physical Protection of Nuclear Material and Nuclear Facilities
13-17 November 2017, Vienna

IAEA's Nuclear Safety Culture



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Interface between Safety and Security



IAEA TECDOC SERIES



IAEA-TECDOC-1801

**Management of the
Interface between
Nuclear Safety and Security
for Research Reactors**



International Conference on Physical Protection of Nuclear Material and Nuclear Facilities
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Combined Nuclear Safety and Security Culture Self-Assessments

- ▶ In 2015 at Paks Nuclear Power Plant, Hungary
- ▶ In 2016 at the Bruce Power Nuclear Power Plant, Canada

Nuclear safety & security culture self-assessment in **Paks NPP 2015**

- ▶ Campaign Month before the assessment
(*Publications, Presentations, Homepage, Database*)
 - ▶ Nuclear Safety Culture in July 2015
 - ▶ Nuclear Security Culture in September 2015
- ▶ Targeted all Paks NPP employees
(without contract and supplement workers from suppliers)

Physical Protection Campaign Month

- ▶ Keep nuclear security regulations
- ▶ Keep in mind, that you work at a Nuclear Power Plant
- ▶ Take care about information security
- ▶ Comply with regulations
- ▶ Report possible incidents
- ▶ Show good example
- ▶ Nuclear security is everyone's interest, responsibility and role



Nuclear safety & security culture self-assessment in **Paks NPP 2015**

- ▶ Survey and Focus Group in September 2015
- ▶ Safety and security culture portions were separated:

Reliability reasons: To be as comparable with previous and safety culture assessments (in 2004, 2005, 2009, 2013 and 2017!)

Methodology of nuclear Safety culture in **Paks NPP 2015**

- ▶ Questions and factors based on INSAG-15
 - ▶ Commitment to safety
 - ▶ Use of procedures
 - ▶ Conservative decision making
 - ▶ A reporting culture
 - ▶ Challenging unsafe acts and conditions
 - ▶ The learning organization
 - ▶ Underpinning issues: communication, clear priorities and organization
- ▶ 26 questions
- ▶ Comparable with safety culture assessments (in 2004, 2005, 2009, 2013 and 2017)

Methodology of nuclear Security culture in Paks NPP

2015

- ▶ Questions and factors based on NST 026:
 - ▶ Professional conduct;
 - ▶ Personal accountability;
 - ▶ Adherence to procedures;
 - ▶ Teamwork and cooperation;
 - ▶ Vigilance;
 - ▶ and Information security,
- ▶ 18 questions (3 questions to each factor)
- ▶ 4 Focus-groups
- ▶ *No interview*

Nuclear safety culture & security culture self-assessment in **Bruce Power NPP 2016**

- ▶ Survey, Focus group and Interview in 2016
- ▶ Targeted all NPP employees
Including contract and supplement workers from suppliers
- ▶ The Questions of Safety and Security Culture portions were separated:
 - ▶ Security consideration: sensitive information
 - ▶ Emphasize the difference between safety and security (culture)

Survey: Nuclear Safety Culture

- ▶ Questions and factors based on WANO PL 2013-1
- ▶ Comparable with previous safety culture assessment (2013)
- ▶ 62 questions were related directly to Safety Culture
- ▶ 2500 answers came back from the 4500
- ▶ Survey was conducted in April

Survey: Nuclear Security Culture

- ▶ Questions and factors based on NST 026
- ▶ 20 questions related to security:
 - ▶ Vigilance
 - ▶ Insider and outsider threat.
 - ▶ Trust
 - ▶ Relationship and interaction between security and other staffs
 - ▶ Sensitive information
 - ▶ Leadership and communications focus on nuclear security.
 - ▶ Adherence to procedures of the security (not just safety)

Interviews

- ▶ Structured interviews, questions were based on the survey (*Half of the questions were asked*)
- ▶ Targeted all Bruce Power NPP employees (including contract and supplement workers from suppliers)
- ▶ Around 300 interviews

Focus Group

- ▶ 10 Focus group with around 9-13 person
- ▶ Voluntary, by a specific position or division
- ▶ Questions were related to specific topics to control theories and comments of the survey
- ▶ 75 minutes

Experience - suggestions

Development

- ▶ Cooperation with the Management and/or the Regulator is a requirement (useful)
- ▶ **Reliability:** Assessments must be comparable with previous and future ones
- ▶ **Validity:** Adhere to the meaning, not to the formalities
- ▶ **ALWAYS MAKE REVIEW!!!** Follow, suggest and examine response actions
- ▶ **Repeat regularly:** not more frequent than 2 (2-5) years, because culture can not be changed faster than that

Technical Implementation

- ▶ Use the same pronoun as a subjective to avoid needless distortion
- ▶ Use the same scale at every questions

Experience - suggestions

Differences and similarities on the level of culture for Safety & Security

- ▶ The management:
 - ▶ regulations,
 - ▶ personnel and
 - ▶ enhancement actions
- ▶ Report Malicious (targeted) acts and credible threat
VS
Mistakes or accident (random events)
- ▶ The approach that “Everybody is responsible”



Thank you for
your attention