



Nuclear Security Culture Self-Assessments at Nuclear Research Reactors: BATAN's Experiences

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National Nuclear Security Administration federal agency for nuclear control

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Outline



- Background
- Present self-assessment activities in BATAN's Nuclear Research Reactor Facilities
- Conclusions

Nuclear Research Reactors



55 years

Reactor Triga Mark II



40 years

Reactor Kartini



32 years

MPR G.A Siwabessy

- Location: **Bandung**
- Operated on **1964**, **250 kW**
- Upgraded to 2000 kW on 2000
- Main function: research and isotopes production

- Location: **Yogyakarta**
- Operated on **1979**, **100 kW**
- Main function: research and human resource training facilities

- Location: **Serpong**, Tangerang
- Operated on **1987**, **30 MW**
- Main function: research and isotopes production and material research

Background



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- **IAEA IPPAS Mission** invited in 2001, and follow up mission in 2007 both recommended an improvement of NSC. The latest IPPAS mission was in 2014
- Indonesia has established nuclear security legal framework such as **Government Regulation No. 54/2012** on Safety and Security in Nuclear Installation
- **BAPETEN Chairman Regulation No. 1/2009**, on the Physical Protection of Nuclear Material and Facility
- BATAN Standard on the Security Management System, (**SB 009/2010**)
- **Standard Operating Procedure** of the Physical Protection of Nuclear Material and Facilities.

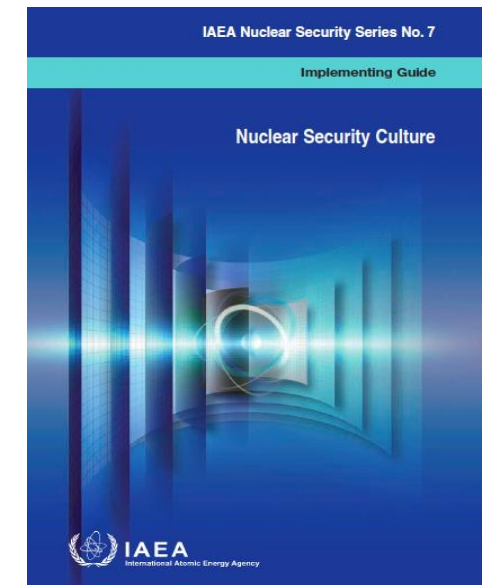


The Needs to Conduct Self-Assessment



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- Real threats occurred at national and worldwide, requires strong nuclear security culture and robust physical protection in place
- BATAN has disseminated Nuclear Security Culture since 2010 until present time
- In the implementation of regulation and procedures there were some obstacles in place (triggered topic: Adherence to Procedure)
- BATAN's high level requested the team to find out current status of the implementation of NSC



Expectations



- To **determine security culture level** at the nuclear research reactors in Bandung, Yogyakarta and Serpong
- To find out the **baseline of NSC** implementation
- To **provide recommendations** to the BATAN's High Level to better implementation on the NSC as required by requirement.
- To test the **IAEA draft guidance under preparation** as a pilot project



Lesson learned from 1st SA



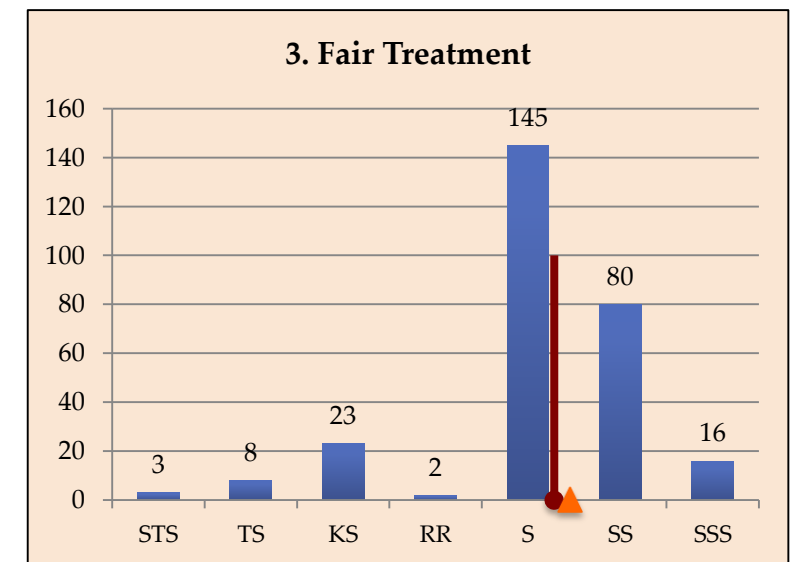
- Respondent had difficulties in answering surveys, since it had **survey statements** 'as it was' presented in the IAEA draft guidance
- Structured interview with a given question guidance and **lack of interview skills**
- Insufficient analysis since only applied two tools: **survey and interview**
- **No psychologist or sociologist involved at the self-assessment team**



Two Years Later Continued 2nd Self-Assessment (SA)



- 2nd SA was aimed to confirm the improvement of NSC.
- Incorporated lesson learned from 1st SA
- 2nd Self Assessment in 2015, applied 4 tools (survey, interview, document review, observation)
- Serpong nuclear research reactor and supporting laboratories
- Similar SA team with addition of Psychologists
- Conducted Train-the-Trainers for new SA Team



In cooperation with Academia (UGM): Students Internship Program



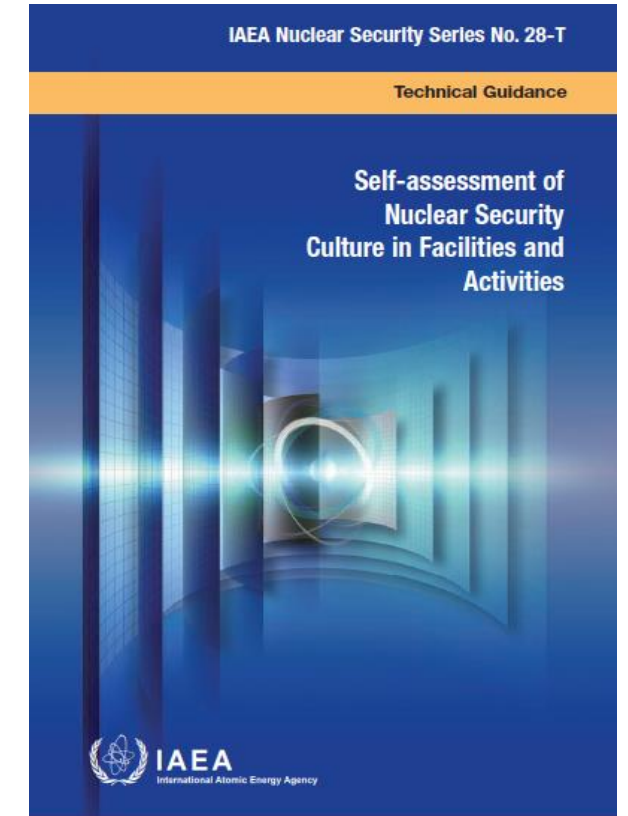
- 3 students internship in CSCA learned on self-assessment
- Duties: processing survey results, preparing interview sheets, and processing interview results
- Participation in interview

Note: finally this student was accepted as BATAN's employees in 2018



The benefits and impacts of the assessment process

- Established baseline for future nuclear security culture evaluation;
- Raised security awareness;
- Improved organizational structure;
- BATAN's Nuclear Security Policy signed by Chairman, Jan 2015;
- Increased mutual understanding between safety and security culture;
- Join organizing of brainstorming safety and security culture interface workshop supported by PNS/U.S. DoS and CITS-UGA observed by IAEA.



2nd self-assessment: Recommendations



- To develop employees competence training related to nuclear security;
- To improve the communication in certain levels (middle management);
- To apply security management system (internal audit of SMKN by BATAN's Auditors Team are in progress).



Program has to be Implemented



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- Develop Security training program;
- Develop Personnel Behavior Guidelines or Security Hand Book;
- Distribute leaflet, poster, flyer;
- Develop Change Agent Management Team Program;
- Develop program to improve communication, *etc.*

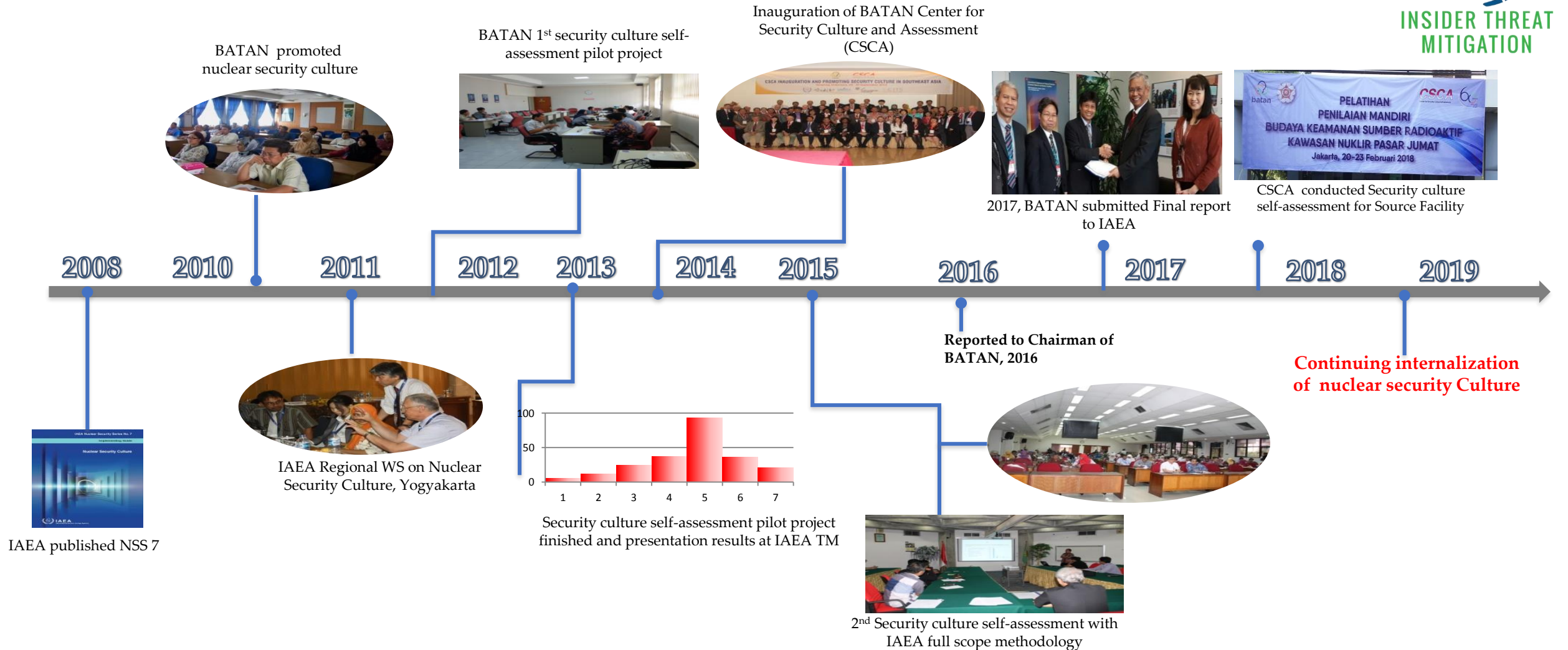


Incredible Years® Administrator/Project Leader Pyramid

Milestones of NSC



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Conclusions



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- BATAN has commenced and been continuing the efforts to fostering nuclear security culture;
- CSCA has been established in cooperation with IAEA and CITS-UGA as a unique center in security culture and assessment;
- Results from self-assessment are valuable and used to improve nuclear security system in BATAN;
- BATAN views the importance of sustainable effort to promote security culture for achieving an effective nuclear security regime and security in general through collaboration with other stake holder.

Thank you for your attention