



# ***Progress and Challenges of Collaborative Work***

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# ***Progress and Challenges of Collaborative Work***

- ***Safeguards by Design (SBD)***
- ***Work with GIF System Steering Committees***

# ***Safeguard by Design***

## **SBD Objectives**

- 1) design new civil nuclear facilities that meet national and international nuclear safeguards requirements;***
- 2) make implementation of safeguards at such facilities more effective and efficient;***
- 3) avoid costly and time consuming redesign and retrofit of facilities***
- 4) design facilities so that the misuse of the facility and/or diversion of nuclear material is technically difficult and easier to detect.***

## **Designer's Goal**

***Reduce the overall project risk by achieving early acceptance of the proposed facility safeguards system by the national authority and the International Atomic Energy Agency (IAEA).***

# Challenges and Next Steps for SBD

- ***The challenge is moving from a general idea of SBD to an approach that a team of safeguards experts, working as part of the facility design team, can use to do a safeguardability analysis and achieve the benefits proponents of safeguards-by design to be realized by both designer and the IAEA***
  - *How would the designer’s team analyze the design, identify pathways, and determine whether the IAEA’s safeguards requirements can be met?*
  - *How can they robustly demonstrate this?*
  - *Can this type of analysis be independently verifiable/validated?*
  - *Would such things as a handbook of values for the performance of different safeguards equipment help?*
  - *What are acceptance criteria?*
- ***Need a “Test Case” using a well-understood design to demonstrate the process***

## *Working with the GIF SSCs*

- Began in mid 2007: introduce PR&PP into the six GIF designs
- **Purpose**: Generate insights for design and operating features to enhance PR&PP performance of Gen IV systems
- **Longer Term**: Establish PR&PP-related design and operation principles and practices
- Three workshops attended by SSC reps and industry observers
- White papers for each design, developed by SSCs & PRPPWG
- Compendium report for public release (mid 2011)
  
- ***Next steps: SSCs should begin at least one or two pilot activities in which they introduce PR&PP into their respective design programs. PRPPWG can work jointly with them if requested and supported***