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INDUSTRY COLLABORATION TO ENHANCE SECURITY AT INDUSTRIAL IRRADIATORS – A Case Study

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Sandia National Laboratories is a multimission laboratory managed and operated by National Technology and Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

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The International Irradiation Association supports the safe and beneficial application of irradiation and promotes the development radiation processing using gamma, electron beam and X-ray technologies.

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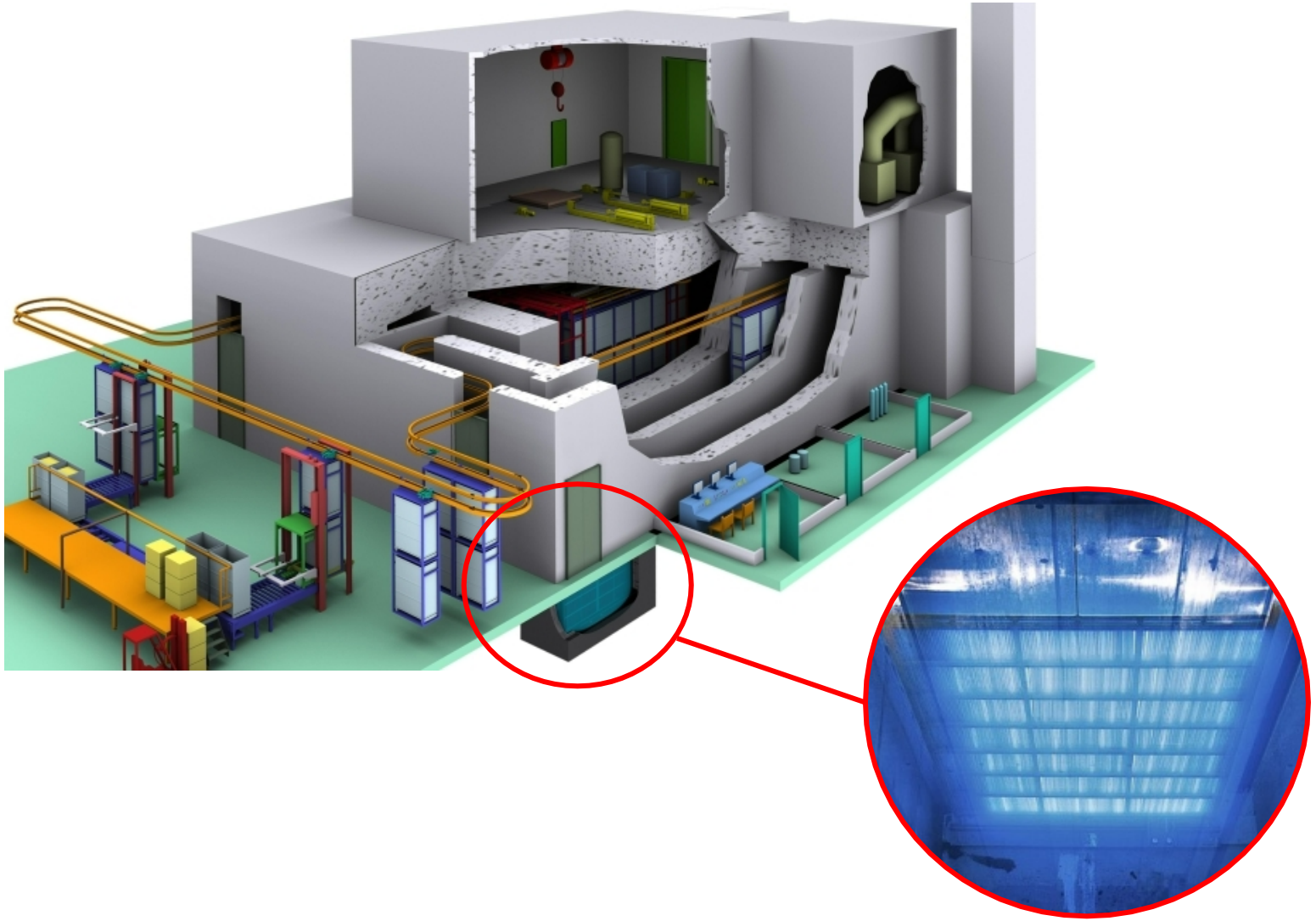
The World Institute for Nuclear Security is a professional institute committed to building an international community of nuclear security professionals who are demonstrably competent and willing to work together to strengthen the security of nuclear and other radioactive materials.

INDUSTRIAL IRRADIATION

- Used for radiation processing
- Typically installed with 0.5 – 5.0MCi Cobalt-60
- Cobalt-60 stored in a pool when not in use
- Cobalt-60 will fail safe under certain conditions
- Irradiation industry remains highly engaged in security matters and has participated in a number of security enhancement initiatives



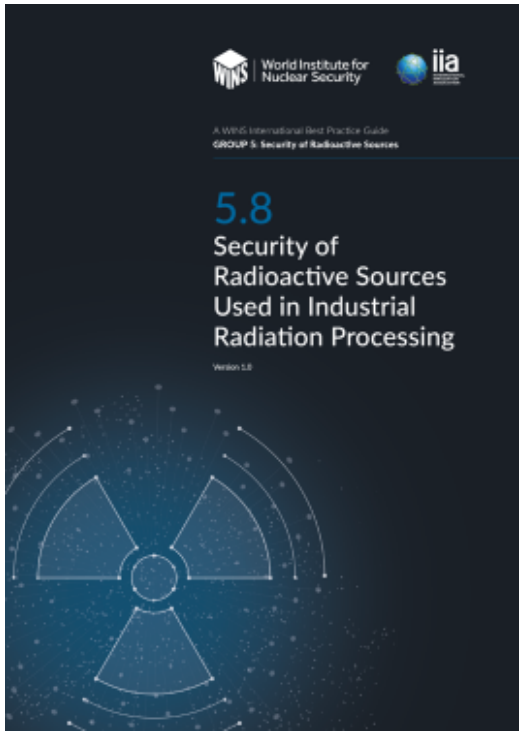
Case Study #1: DEVELOPMENT OF A NEW PHYSICAL SECURITY SYSTEM

- iia Gamma Working Group (GWG) and SANDIA National Laboratories (SNL)
- SNL: R&D project to develop a system that visually hides Cobalt-60 sources when under attack

  Chemical obscurant – highly effective
- GWG: Ensure no undesirable operating conditions or new safety/security concerns
- Collaboration
  - greater understanding
  - change of focus and direction
- Result
  - a new system that enhances security and meets operational needs

Case Study #2: SECURITY BEST PRACTICE

- iia Gamma Working Group (GWG) and World Institute for Nuclear Security (WINS)
- Develop and share Best Security Practice for industrial Irradiation Industry
- Industry specific / Practical guidance
- Industry input and review – is guide correct, appropriate and focussed?
- Guide published March 2020 / Webinar September 2020
- Collaboration
  - real life experience of industry security practitioners
  - practical experience of publication and webinars
- Result
  - industry best practice now brought together in a single document



Case Study #3: SECURITY EFFECTIVENESS ASSESSMENT

- iia GWG, WINS and SNL
- Enable operators to assess their security arrangements against best practice
- High level / Third party or self assessment / Practical guidance / 7 key security
- GWG input and review - is methodology appropriate and focussed?
- Methodology published May 2021 / Trial of methodology in March 2022
- Industry engagement
  - input from experienced industry security assessors
  - real life experience of using methodology
- Result
  - high level of confidence that methodology is appropriate and effective

SUMMARY

- Collaboration between stakeholders is successful when objectives are aligned

  - future projects are planned for GWG and the irradiation industry

- Industry engagement increases adoption of systems and processes

  - physical systems become technically and operationally acceptable

  - processes are industry appropriate

  - unique industry features and considerations are addressed

- Collaboration and industry engagement helps to remove objections