TWG #7: FUEL CYCLE FACILITIES

1. BACKGROUND

Fuel cycle facilities are increasing reliance on electronic digital systems and components for controlling safety and material safeguards related risks in the following areas:

- Worker, public and environmental protection
- Physical protection of items relied on for safety (IROFS) and hazardous materials
- Nuclear material control and accounting
- Protection of sensitive information and material

Digital systems bring many advantages, but also require addressing of risks associated with natural phenomena, human error, hardware/software performance and malevolent acts.

2. SCOPE

The following areas and associated activities will be addressed by TWG #7

- Characterize electronic digital systems and components contribution to safety and security related risks
- Consider controls for managing risk contribution
  - Design
  - Configuration control
  - Protection
- Determine need for and approach for reducing risk contribution

3. PROBLEM STATEMENT (S):

<u>Problem 1</u>

A determination as to whether all or part of Draft DI&C-ISG-01, CYBER SECURITY ASSOCIATED WITH DIGITAL INSTRUMENTATION AND CONTROLS, provides adequate guidance for approving cyber security safety systems at fuel cycle facilities, and if not, what additional guidance would be needed.

<u>Problem 2</u>

Clarity is desired on whether there is a technically justifiable basis for excluding some types of common cause failures in digital I&C systems and components that are items relied on for safety (IROFS).

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For Part 70 fuel cycle facilities, clarification is needed as to what constitutes adequate diversity [as required in the performance requirements of 10 CFR 70.61 and 70.64 (a)(9)] and defense-in-depth [as stated in the context of 70.64(b)] in the design of digital systems.

Problem 3

Evaluate the issue of independence with respect to double contingency requirements in 70.64(a)(9) regarding common controllers, including the role of layers of protection analysis (LOPA) in the evaluation of independence.

Problem 4

A determination as to whether all or part of DI&C-ISG-04, HIGHLY-INTEGRATED CONTROL ROOMS—COMMUNICATIONS ISSUES (HICRc), provides adequate guidance for fuel cycle facilities, and if not what additional guidance would be needed.

Problem 5

Address whether, how, and to what extent, digital system hardware or software design, and software validation and verification under an NQA-01-2000 or later program is addressed. Define and/or clarify what are the minimum regulatory requirements for quality digital systems.

4. DELIVERABLES:

TWG #7 will develop one ISG document to include the following deliverables:

Problem 1

Determine the need for and approach for cyber security requirements for fuel cycle facilities. Evaluate recommendations and guidance being developed by Task Working Group (TWG) #1, Draft DI&C-ISG-01, CYBER SECURITY ASSOCIATED WITH DIGITAL INSTRUMENTATION AND CONTROLS. Interim Staff Guidance (ISG) developed will be for applicability and pertinence to Part 70 fuel cycle facilities. Interim staff guidance will be adopted or developed, as appropriate.

Problem 2

Review FCSS ISG-04, CLARIFICATION OF BASELINE DESIGN CRITERIA and evaluate recommendations and guidance being developed by Task Working Group (TWG) #2, DI&C-ISG-02, DIVERSITY AND DEFENSE-IN-DEPTH ISSUES to determine if FCSS ISG-04 needs to be updated as needed or if separate interim staff guidance needs to be drafted or adopted.

Problem 3

Determine the significance of independence with respect to double contingency requirements in 70.64(a)(9). Evaluate FCSS-ISG-03 NUCLEAR CRITICALITY SAFETY PERFORMANCE REQUIREMENTS AND DOUBLE CONTINGENCY PRINCIPLE and determine if applicable or if there is a need to update this guidance.

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Problem 4

Evaluate recommendations and guidance being developed by Task Working Group (TWG) #4, DI&C-ISG-04, HIGHLY-INTEGRATED CONTROL ROOMS—COMMUNICATIONS ISSUES (HICRc). Interim Staff Guidance (ISG) developed will be for applicability and pertinence to Part 70 fuel cycle facilities. Interim staff guidance will be adopted or developed, as appropriate.

Problem 5

(Additional clarification is needed from industry.)

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