BOUNDING ASSUMPTIONS DESIGN FEATURES

CURRENT FUEL CYCLE LICENSEE PERSPECTIVE

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NUCIFAR ENERGY INSTITUTE

Enclosure 5

BOUNDING ASSUMPTIONS
DESIGN FEATURES
INITIAL CONDITIONS

- Name tags applied to the way certain structures, and components were treated in setting up the Hazards Analysis supporting the ISAs performed for facilities already operating when Part 70 was changed
- Briefly referenced in ISG-01
- Not defined in the regulation
- Not mentioned by these name tags in the Licensee ISA Summaries or ISA Procedure
- The items themselves are identified in the ISA/ISA Summaries

SAFETY PERFORMANCE PRE - 2000

- On the average plant performance was good
- Occasional significant losses of control were troublesome
- NRC and Industry recognized that improvement was indicated
- NEI supported Industry petition for rule making

SAFETY PERFORMANCE PRE - 2000

- Safety elements treated independently
- "**Controls**" were referenced as items that prevented undesirable consequences and ranked equally
  - Passive features
  - Active features including administrative actions

PART 70 RULE TAKES NEW DIRECTION

- Treat all aspects of safety in an integrated manner so that the resulting safety program adequately addresses each element – ISA patterned after AIChE
- Risk inform the regulatory requirements so that the safety program is structured to minimize risk
- Established clear performance requirements – Assured by "IROFS"
- Documented in ISA Summaries approved by NRC

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10-YEAR IMPLEMENTATION

- 9/18/2000 – Rule placed large responsibility on licensee to define "How To"
- 4/18/2001 – Licensees developed their ISA Plans and submitted to NRC for Approval
- Licensees Immediately began ISA work to meet tight 10/18/2004 regulatory deadline
- NRC approved Licensee Plans typically in 6-months
- All Licensee ISA Summaries submitted by 10/18/2004 for NRC Approval
- NRC completed approvals early 2008
- Considering the magnitude of the rule change, implementation went reasonably smoothly

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CURRENT SITUATION

- After a 10-year implementation period
  - Significant work and investment by licensees
  - Reviews and Approvals by NRC
  - Certain aspects as to the way plant features/controls were treated in the ISA process are under challenge by the NRC Licensing, Inspection and Enforcement Staffs in the absence of safety issues
- Currently referred to as *Bounding Assumptions, Design Features or Initial Conditions*

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LICENSEE APPROACH

- Operating plants had two types of controls under the prior regulations
  - Passive engineered features such as fixed geometries, building structures, physical layout that were designed into the processes and facilities and generally easily controlled
  - Active engineered features and administrative actions which included all other controls and involved things than needed significant ongoing care and oversight to assure they functioned when required to perform their safety function

LICENSEE APPROACH

- In setting up to perform the ISA work, the passive engineered features were typically considered to be design features/bounding assumptions for the starting point of the hazards analysis
  - As such they are important to the safe operation of the facility and they are included in the functional description of the process (70.62) and included in those items that must be managed and maintained by the management systems (70.72) for the plant
  - They typically were not considered to meet the definition of IROFS as defined in the new regulations

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LICENSEE APPROACH

- Once the starting point for the hazards analysis was defined (including the design features) accident sequences were identified and controls were applied until sufficient controls were present to demonstrate that the performance requirements could be met
  - These controls are identified as IROFS as defined in the current regulations
  - These represent active features of the process and facility, including administrative actions that must be maintained to meet the performance requirements

LICENSEE'S POSITION

- Licensees believe that regulatory requirements have been met at each facility based on:
  - Submittal and NRC approval of ISA Plans (70.62)
  - NRC review and approval of ISA Summaries and updates
- Provisions of 70.62 and 70.72 place the complete basis of safety for the facility under configuration management and management oversight
- Controls required to meet the performance requirements and which need special management and NRC oversight are identified as IROFS
- This approach provides for a risk informed, performance based safety program implementation completely encompassed by NRC regulatory oversight and control

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PROPOSED RESOLUTION

- Incorporating new rules for IROFS without a justified safety need is unnecessarily costly and detracts from the effort to administer the safety program
- NRC should issue a Notice of Enforcement Discretion as suggested in the NEI letter dated January 22, 2010, recognizing that licensee specific handling of design features was previously approved during the NRC review of each site's ISA and that adequate regulatory assurance exists that design features not designated as IROFS are managed and controlled appropriately

PROPSED RESOLUTION

- NRC should work with industry to clarify the manner in which information that typically includes *bounding assumptions, design features and initial conditions* necessary to conduct the facility ISAs is treated in the procedures and ISA Summaries to avoid ongoing misunderstandings

- Some proposed modifications to NUREG 1520 are premature and guidance needs to be updated to adequately address and clarify current practice as acceptable

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