10CFR50.69 for New Plants

Process Summary and New Plant Considerations

Risk Informed Component Classification

- 10CFR50.69 provides a method for evaluating equipment by its risk significance in order to applying appropriate levels of special treatment to the equipment
- It replaces the traditional safety related/ non-safety related classification with 4 categories:
  - Safety related high risk, safety related low risk, non-safety related high risk and non-safety related low risk (RISC 1-4)

Classification

- All the functions of a system are identified
  - Design basis
  - Beyond design basis
  - PRA
  - Normal function
- All the components in a system are assigned to at least one function

Risk Significance

- Each component and its function(s) are evaluated for risk significance via the PRA
- PRA is all modes (internal events, fire, seismic, shutdown)
- Above the threshold value, it's candidate high
- If not , it's candidate low safety significance.

Additional consideration

- Safety margins and defense in depth are also considered

IDP

- The candidate classification is sent to an integrated design making panel for the final determination

Post classification

- For low safety related components and high non- safety related components, the special treatment requirements are adjusted.
- For the low SR components, the special treatment requirements that are not related to the critical attributes of the component are relaxed. The equipment still has to reliably perform its safety related functions.

Post classification

- For high non-safety related, requirements are added related to the function that makes it high.
- It does not become safety related.

New Plant Considerations

- Process assumes an initial safety related/ non-safety related classification for all components.
  - Thus initial procurement of safety related components would require full special treatment provisions unless the SR equipment goes through the 50.69 process prior to purchase.

New Plant Considerations

- Process assumes a full scope PRA
  - PRA standard leans toward use of plant specific data for failure rates, which a new plant would not have.
  - Human error probabilities in the PRA rely on plant implementing procedures

New Plant Considerations

- Process assumes all functions are known
  - This may not be true for beyond design basis functions or other “ off label” functions until the plant is complete and procedures written.