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## Public Meeting on Fuel Cycle Oversight Process Enhancements

August 18-19, 2011



# Objective, Outcomes, and Milestones

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## ▶ Meeting Objective

- ▶ Discuss staff proposed enhancements to the fuel cycle oversight process and next steps

## ▶ Meeting Outcomes

- ▶ Agreement or understanding of differences on performance deficiency definition
- ▶ Agreement or understanding of differences on attributes of an effective corrective action program
- ▶ Understanding of conceptual SDP types
- ▶ Agreement or understanding of differences on cornerstones

## ▶ Milestones

- ▶ SECY paper – September 30, 2011
- ▶ Commission Briefing – November 1, 2011



# Agenda – August 18, 2011

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8:30 a.m.	Introductions
8:40 a.m.	Opening Remarks
8:50 a.m.	Enhancement to the Fuel Cycle Oversight Process (FCOP)
9:15 a.m.	Performance Deficiency
10:45 a.m.	Break
11:00 a.m.	Corrective Action Program (CAP) Implementation
12:00 noon	Lunch
1:00 p.m.	CAP Implementation (continued)
2:30 p.m.	Potential Types of Significance Determination Processes (SDPs) in the FCOP
3:30 p.m.	Break
3:45 p.m.	Potential Types of SDPs in the FCOP (continued)
4:50 p.m.	Questions from Members of the Public
5:00 p.m.	Adjourn



# Agenda – August 19, 2011

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- 8:30 a.m.      Synopsis of First Day
- 8:40 a.m.      Cornerstones in the FCOP
- 10:45 a.m.    Break/Caucus
- 11:15 a.m.    Next Steps in the FCOP
- 12:20 p.m.    Questions from Members of the Public
- 12:30 p.m.    Adjourn



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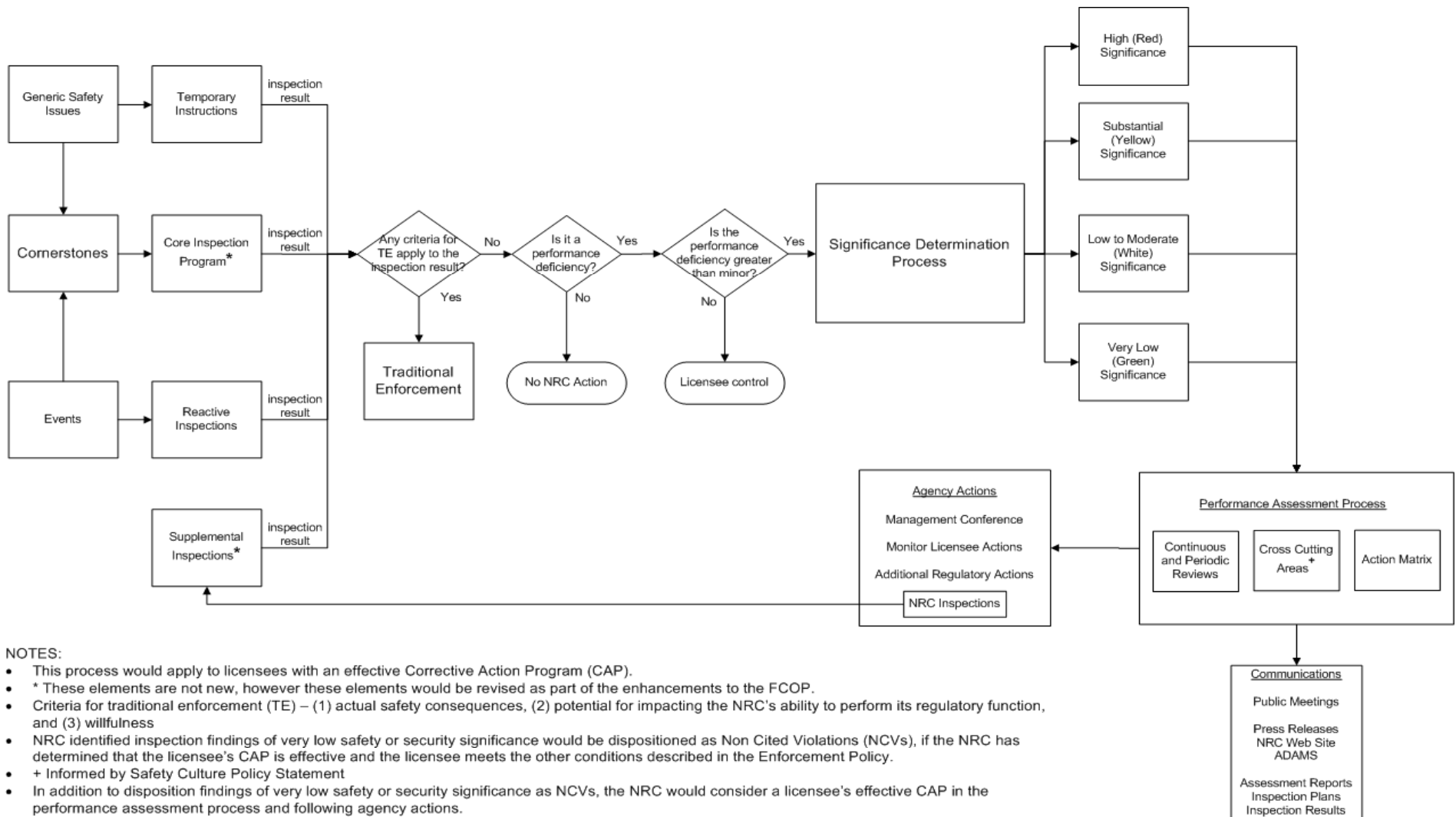
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## Enhancements to the Fuel Cycle Oversight Process

# Conceptual Diagram of Recommended FCOP



## NOTES:

- This process would apply to licensees with an effective Corrective Action Program (CAP).
- \* These elements are not new, however these elements would be revised as part of the enhancements to the FCOP.
- Criteria for traditional enforcement (TE) – (1) actual safety consequences, (2) potential for impacting the NRC's ability to perform its regulatory function, and (3) willfulness
- NRC identified inspection findings of very low safety or security significance would be dispositioned as Non Cited Violations (NCVs), if the NRC has determined that the licensee's CAP is effective and the licensee meets the other conditions described in the Enforcement Policy.
- + Informed by Safety Culture Policy Statement
- In addition to disposition findings of very low safety or security significance as NCVs, the NRC would consider a licensee's effective CAP in the performance assessment process and following agency actions.



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Performance Deficiency



# Performance Deficiency

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- ▶ “An issue that is the result of a licensee not meeting a requirement or standard where the cause was reasonably within the licensee’s ability to foresee and correct, and **therefore** should have been prevented. A performance deficiency can exist if a licensee fails to meet a self-imposed standard or a standard required by regulation, **thus a performance deficiency may exist independently of whether a regulatory requirement was violated.**”
- ▶ Text in **red** shows revisions to the definition of performance deficiency (PD) since 2009.



# Industry's Comments on PD Definition (from ML092180684)

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- ▶ **“ISSUE”**
  - ▶ “We understand the term *issue* as used in the ROP process, however, it does not seem to be clear enough for a good parallel for fuel facilities. i.e. an issue of concern as determined through inspection or as the result of an actual event more closely defines what is considered here.”
- ▶ **“WAS REASONABLY WITHIN THE LICENSEE’S ABILITY TO FORSEE AND CORRECT”**
  - ▶ “While the thought is good as we understand it, we also understand that a statement like this is troublesome and clearly open to broad and complex interpretation in the world of inspection and enforcement.”
- ▶ **“THAT SHOULD HAVE BEEN PREVENTED”**
  - ▶ “We understand that the purpose here is to screen out here things that are considered ‘acts of god’ and while this is appropriate, this simple wording in a definition is again very open to complex and varied interpretation across the inspection staff.”
- ▶ **“A SELF IMPOSED STANDARD”**
  - ▶ By including self-imposed standards, a significant disincentive to continuous improvement and management initiative to establish aggressive margins of safety that are of benefit to the safety of operations. We find no regulatory basis for the inclusion of this disincentive in the definition to 10 CFR 70 licensed facilities.



## Industry's Proposed PD Definition (from ML092180684)

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- ▶ “An occurrence at or the state of a licensed facility that is the result of a licensee not meeting a regulatory requirement or license commitment. If the occurrence or state is of low to no safety significance and the licensee identified (including events) the occurrence or state and it managing them in accordance with their Corrective Action Program this would not constitute a Performance Deficiency.”

# Feedback on NEI's Comments and Proposed Performance Deficiency Definition

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- ▶ NRC expects that many performance deficiencies resulting from “self-imposed” standards will be minor and not pursued by the NRC.
- ▶ Minor performance deficiencies, including from “self-imposed” standards will be discussed later today.



# FCOP Minor Screening Process

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- ▶ Applied to all performance deficiencies (PDs) and only to PDs
- ▶ Two step process
  - ▶ Apply minor screening questions
  - ▶ Compare to examples of minor issues



# FCOP Minor Screening Process

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- ▶ First step - If the answer to all screening questions is no, then the PD is considered minor. If the answer to one or more questions is yes, then the PD will be considered more-than-minor.
  - ▶ Could the PD be reasonably viewed as a precursor to a significant event?
  - ▶ If left uncorrected, would the PD have the potential to lead to a more significant safety concern?
  - ▶ Is the PD associated with one of the FCOP cornerstone attributes and did the PD adversely affect the associated cornerstone objective?



# FCOP Minor Screening Process

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- ▶ If necessary, or as a check of the results from Step I, the PD can be compared to examples to aid in the final decision
- ▶ If PD is similar to the minor example and dissimilar from the more-than-minor example to reasonably confirm the answers to all the minor screening questions is no, then it is minor
- ▶ If PD is similar to the more-than-minor example and dissimilar from the minor example to reasonably confirm the answer to one or more of the minor screening questions is yes, then it is more-than-minor

# Example of Minor Issue – Surveillance Test Completion Records not Documented

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- I. The licensee's surveillance test records were not complete for a valve that is an IROFS because the operators completed the surveillance procedure but failed to record one section of the test.

The surveillance test and its record of completion is required by a procedure.

Minor because: The surveillance test was performed, but not completely documented. The portion of the test documented and the last completed surveillance test revealed that the equipment performed its' safety function.

Not minor if: The subsequent surveillance test showed that the equipment would not perform some safety-related function.

# Example of Minor Issue –Records Damaged by Water Intrusion

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2. In a records storage vault, the licensee observes a ceiling leak. Temporary containers were used to collect water during rainstorms. This “work around” was entered for resolution in the licensee’s corrective action program. The condition continued for a year. The containers overflowed during a heavy weekend rainstorm when no one was available to monitor the containers and some documents required by the license to be maintained were damaged, but were still readable.

The licensee failed to correct the water intrusion problem in a prompt manner which resulted in damage to records that were required to be maintained by NRC regulations.



## Example of Minor Issue –Records Damaged by Water Intrusion (continued)

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2.

Minor because: This was a failure to implement corrective actions that had no safety impact because no records were lost.

Not minor if: Required records were irretrievably lost.



## Example of Minor Issue – Failure to Energize Heat Tracer

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3. The licensee's procedure required that heat tracing be energized in the diesel fire pump room from September 30 to April 30. In December, an inspector observed that the heat tracing was de-energized. The room temperature was 68 degrees, maintained by the steam boiler (50 degrees was the minimum temperature for operations). The temperature of the room was monitored and annunciated in the control room. An annunciator response procedure instructs operators to check heat tracing if the room temperature alarms were received. The inspector verified that the temperature in the room had not dropped below 50 degrees since September 30. The licensee did not implement a procedure required by its NRC license.



## Example of Minor Issue – Failure to Energize Heat Tracer (continued)

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3.

Minor because: This is a failure to implement a procedural requirement that had no safety impact under the given situation. The temperature had not dropped below the minimum temperature for operations.

Not minor if: The annunciator was inoperable or the room temperature fell below 50 degrees.

# Example of Minor Issue – Security Fence Height

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4. The licensee's security fence is required to be 12 feet tall. The NRC discovers that, in one section, the fence is only 11 feet, 10 inches tall.

A license condition requires that the licensee meet their Physical Security Plan, which states that the security fence is required to be 12 feet tall.

Minor because: This is not a significant dimensional discrepancy such that the fence would have performed its intended function.

Not minor if: The fence was significantly shorter (e.g., 11 feet).

# Example of Minor Issue – Failure to Translate Design Information to As-Built Configuration

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5. During installation of a modification, the licensee failed to follow the installation procedures and a check valve, an IROFS, is installed backward. Quality control did not find the error. During a post-modification test, prior to returning the system to service, the licensee discovered the problem.

The licensee failed to correctly translate the design to the as-built configuration.

Minor because: It is work in progress and there are no safety consequences.

Not minor if: The system was returned to service.



## Example of Minor Issue – Failure to Incorporate Fire Plan Changes

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6. The licensee completes some minor facility changes. Six months later, an NRC inspector reviews the pre-fire plan and finds that the licensee failed to incorporate the changes into the plan.

Licensee procedures (required to be implemented by the license) require that facility changes be incorporated into the fire plan.

Minor because: The changes did not include new processes or new fire hazards.

Not minor if: The changes include new processes or new fire hazards.



## Example of Minor Issue – Inadequate Radiation Survey

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7. An inadequate radiation survey did not identify a radiation area (i.e., dose rates were  $> 5$  mrem/hr at 30 cm and  $\leq 100$  mrem/hr at 30 cm)

An inadequate radiation survey (10 CFR Part 20) was performed resulting in an unposted radiation area.

Minor because: Radiological conditions existed such that the dose to an uninformed worker (e.g., a worker who had not been briefed on or reviewed radiological conditions) was not likely to exceed an unplanned dose  $> 10$  mrem.

Not minor if: Radiological conditions existed such that the dose to an uninformed worker was likely to exceed an unplanned dose  $> 10$  mrem.

# Example of Minor Issue – Self-Imposed Standard More Restrictive than the License



8. The licensee established an administrative limit of 32 kg of uranium inside a hood. While conducting operations, an operator inadvertently allowed the accumulated mass of uranium in the hood to exceed 32 kg, but did not allow it to exceed the 50 kg safety limit established by the criticality safety analysis of the operation and hood. The operator subsequently recognized that the 32 kg limit has been exceeded before it exceeded the 50 kg safety limit and took the appropriate action in response to this condition.

The licensee failed to meet a self-imposed standard more restrictive than that set in the license.

Minor because: The self-imposed administrative limit, which had no safety related basis, was exceeded, but the actual safety limit was not. In addition, the operator recognized that the administrative mass limit had been exceeded and took the appropriate actions in response to this condition.

Not minor if: The operator or other licensee staff fail to recognize that the 32 kg administrative limit had been exceeded and continue to allow uranium to be added to the hood or the operator recognizes that the 32 kg limit had been exceeded and fails to take the appropriate action in response to this condition.



## Example of Minor Issue – Bioassay Frequency in Procedure More Frequent than in License

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9. A licensee's radiation protection procedure (required to be implemented by the license) required weekly bioassay of staff working with Class D uranium. The license required monthly bioassays. A weekly bioassay sample was missed.

The licensee failed to meet a self-imposed standard more restrictive than that set in the license.

Minor because: The licensee took and analyzed the bioassay samples at the license-required monthly frequency.

Not minor if: The licensee had not taken and analyzed bioassay samples at the monthly frequency.

# Example of Minor Issue – Failure to Meet the Criteria of a Self-Imposed ANSI Standard

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I0.A licensee committed to a self-imposed standard, ANSI N323-xxxx (draft), that requires that neutron survey meters be checked with a neutron source during each calibration. The license only required that the meters be electronically calibrated. The licensee failed to source check several meters during calibration.

The licensee failed to meet a self-imposed standard more restrictive than that set in the license.

Minor because: The survey meters responded adequately when neutron source checked after the failure was identified.

Not minor if: The survey meters had not been electronically calibrated as the license required and they had been used.



# Examples of Minor Issues

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- ▶ NRC staff will continue to develop minor issue examples for incorporation into a document to be used by NRC staff in the minor issues screening process
- ▶ NEI and licensees are encouraged to provide examples for review and consideration for inclusion in this document



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## Corrective Action Program Implementation

Jay Henson



# Corrective Action Program Objective

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- ▶ Measures shall be established to assure that conditions adverse to safety or security, such as failures, malfunctions, deficiencies, deviations, defective material and equipment and nonconformances are promptly identified and corrected. In the case of significant conditions adverse to safety or security, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition. The identification of the significant condition adverse to safety or security, the cause of the condition, and the corrective action taken shall be documented and reported to appropriate levels of management.



# Corrective Action Program Objective

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- ▶ The attributes of a corrective action program that the NRC considers to be those of an effective corrective action program are provided in the following slides.
- ▶ There are five primary program areas and the elements for each of these areas are described.
- ▶ A licensee that implements a corrective action program that includes these areas and elements, or includes similar areas and elements that accomplish the same purpose, should effectively assure that conditions adverse to safety or security are identified, evaluated and corrected to prevent their recurrence.



# Effective CAP Attributes

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## A. Policies, Programs, and Procedures

The licensee describes the Corrective Action Program (CAP) expectations, requirements and implementation processes in policies, programs and/or procedures that apply to and are uniformly implemented across the licensees' organization and licensed operations.



# Effective CAP Attributes

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- ▶ The CAP policies, programs and/or procedures ensure:
    - ▶ All staff aware of their roles and responsibilities
    - ▶ Staff encouraged to identify and report issues without fear of retaliation
    - ▶ Management periodically informed of CAP status
    - ▶ CAP adequately resourced and managed
    - ▶ CAP procedures address all program elements
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# Effective CAP Attributes

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## B. Identification, Reporting and Documentation of Safety and Security Issues

Licensee staff, supervisors, and managers routinely recognize and promptly report safety and security issues in a manner that supports the timely and effective assessment of the issues. CAP related information is appropriately documented and retained for reference to support the communication, tracking and trending of information.



# Effective CAP Attributes

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- ▶ Issue identification, reporting and documentation policies, programs and/or procedures ensure:
  - ▶ Staff is aware of how to identify and report issues
  - ▶ CAP issues come from a variety of sources
  - ▶ Staff can submit issues by several methods
  - ▶ CAP reporting procedures emphasize reporting of issues at appropriate level and timely



# Effective CAP Attributes

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- ▶ Issue identification, reporting and documentation policies, programs and/or procedures ensure: (continued)
- ▶ Information documented in CAP supports complete, accurate and timely correction of issues
- ▶ CAP information communicated to appropriate staff and available to support complete, accurate and timely correction of issues



# Effective CAP Attributes

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## C. Significance Assessment and Causal Evaluation of Safety and Security Issues

The licensees' assessment of the actual and potential significance of issues enables it to appropriately apply its graded risk approach, based on the issues significance, to the timing and scope of response to the issues, including the depth and detail of the causal evaluation. The licensees' application of its causal evaluation process routinely enables it to adequately identify issue causes related to all issues and the contributing factors and root causes of the issues of greatest significance.



# Effective CAP Attributes

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- ▶ Significance assessment and causal evaluation policies, programs, and/or procedures ensure:
  - ▶ Reported issues are screened for significance and reportability
  - ▶ Issue assessment process ranks issues by significance and results in appropriate response which can be based on a graded approach
  - ▶ Issue significance is reassessed if information obtained indicates original assessment incorrect



# Effective CAP Attributes

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- ▶ Significance assessment and causal evaluation policies, programs, and/or procedures ensure: (continued)
  - ▶ A more formal, in-depth issue investigation and causal evaluation, conducted by qualified staff, is completed for the most significant issues
  
- ▶ The causal evaluation for the most significant issues evaluates extent-of-condition and cause and other generic implications



# Effective CAP Attributes

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## D. Development and Implementation of Corrective Actions for Each Issue

The licensees' identification and implementation of corrective actions is timely and routinely effective in preventing the recurrence of the same issue or the occurrence of similar safety and security issues, and is most effective in preventing the recurrence of issues of the greatest significance.



# Effective CAP Attributes

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- ▶ Corrective action development and implementation policies, programs and procedures ensure:
  - ▶ Corrective actions are effective and timely
  - ▶ Corrective action completion is verified and assessed
  - ▶ Corrective actions are achievable, scheduled for completion, and responsibility for completion is assigned





# Effective CAP Attributes

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- ▶ Corrective action development and implementation policies, programs and procedures ensure: (continued)
- ▶ Management is periodically informed of corrective action status
- ▶ Corrective actions are documented, tracked and trended



# Effective CAP Attributes

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## E. Assessment of Corrective Action and Program Effectiveness

The licensees' implementation of its CAP results in the identification and implementation of effective corrective actions and the recognition and resolution of ineffective corrective actions. The licensee implements a CAP assessment process that enables it to identify and correct CAP performance issues that reduce CAP effectiveness in the identification, reporting, assessment and correction of safety and security issues and the prevention of the recurrence of the same issues or occurrence of similar issues.



# Effective CAP Attributes

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- ▶ Corrective actions and CAP effectiveness assessment policies, programs and/or procedures ensure:
  - ▶ Corrective actions are complete and effective
  - ▶ CAP information is tracked and trended to confirm effectiveness and identify weaknesses
  - ▶ Periodic assessments of the CAP are performed to confirm effectiveness and identify weaknesses



# Effective CAP Assessment Process

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- ▶ Either NEI prepares and NRC endorses or NRC prepares document describing the attributes of an effective CAP
- ▶ Licensees are informed if they want the NRC to apply the revised NCV policy, they must be committed to a CAP in their license that includes the same or similar attributes
- ▶ Licensees will be requested to provide their assertion that their current license commitments describe a CAP with the same or similar attributes or submit a license amendment to include the necessary, additional CAP attributes



# Effective CAP Assessment Process

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- ▶ NRC staff will assess existing license commitments and/or license amendments and determine if CAP license commitment is adequate
- ▶ If CAP commitment is adequate, NRC will schedule CAP inspection with licensee
- ▶ If CAP commitment is not adequate, NRC will issue Request for Additional Information and licensee can provide information or decline to respond and NRC will not apply revised NCV policy



# Effective CAP Assessment Process

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- ▶ For those licensees who have an adequate CAP license commitment, the NRC will schedule a CAP inspection to verify the implemented CAP is effective
- ▶ If as a result of this inspection, the NRC concludes the licensee's CAP is effective, the NRC will apply the revised NCV policy
- ▶ If a licensee who did not have an adequate CAP commitment in their license subsequently submits a CAP license amendment, the NRC will implement the same review and assessment process



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## Potential Types of SDPs for the FCOP

Dennis Damon



# SDP Types

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- ▶ SDP types applicable to ISA-related cornerstones
  - ▶ Criticality, Chemical, and Radiation Safety (10 CFR 70.61)
  - ▶ Accident Sequence Initiators, Safety Controls
  
- ▶ SDP types would apply to both cornerstone options (discussion on cornerstones, later)
  
- ▶ Deterministic
  - ▶ Emergency Preparedness
  - ▶ Radiation Protection (10 CFR Part 20)
  - ▶ Security
  - ▶ Material Control and Accounting





# SDP Types

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- ▶ Development and testing project to recommend a significance determination process for inspection findings
- ▶ Desired characteristics of an SDP
  - ▶ Realistic/accurate
  - ▶ Practicable
  - ▶ Consistent
- ▶ Discussion of three types of SDPs
  - ▶ Type 1 – Based on fully quantitative PRA
  - ▶ Type 2 – Case-by-case ISA-informed evaluation
  - ▶ Type 3 – Deterministic evaluation



## Type 1 – Based on Fully Quantitative PRA

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- ▶ Requires full PRA for all processes at all facilities
- ▶ Requires inspector notebooks for performing significance evaluation
  
- ▶ Pros:
  - ▶ Based on licensee PRA, thus most informed and precise basis
  
- ▶ Cons:
  - ▶ Requires orders of magnitude more resources
  - ▶ Not necessary. Evaluations could usually be done case-by-case
  - ▶ PRAs would not be standardized, hence significance might not be consistent
  - ▶ Quantitative risk technology for fuel cycle is undeveloped



## Type 2 – Case-by-Case ISA-Informed Evaluation

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- ▶ Evaluate risk and safety significance of each finding when it occurs
- ▶ Adjust ISA results using standardized NRC guidance and data
- ▶ Could be simplified quantitative method
- ▶ Pros:
  - ▶ Reasonably accurate
  - ▶ Standardized, hence consistent across licensees
  - ▶ Could be more generic and simplified than plant-specific PRA
- ▶ Cons:
  - ▶ Quantitative risk technology for fuel cycle is undeveloped
  - ▶ Hence, requires some quantitative development resources
  - ▶ Limited time to do risk assessment on which evaluation is based



## Type 3 – Deterministic Evaluation

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- ▶ Based on qualitative criteria, not numbers
- ▶ But would have similar risk and safety significance objectives to other types
- ▶ Perhaps based on a refined risk-index defense-in-depth method
- ▶ Pros:
  - ▶ Even more simplified than Type 2
  - ▶ Somewhat less resources than Type 2
  - ▶ More objective, avoids some uncertainties of quantitative methods
  - ▶ Standardized, hence consistent across licensees
- ▶ Cons:
  - ▶ Less informed by analysis and data, hence less precise



# Initial Suggestion

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- ▶ Preferred alternative
  - ▶ Type 3 SDP – Deterministic Evaluation



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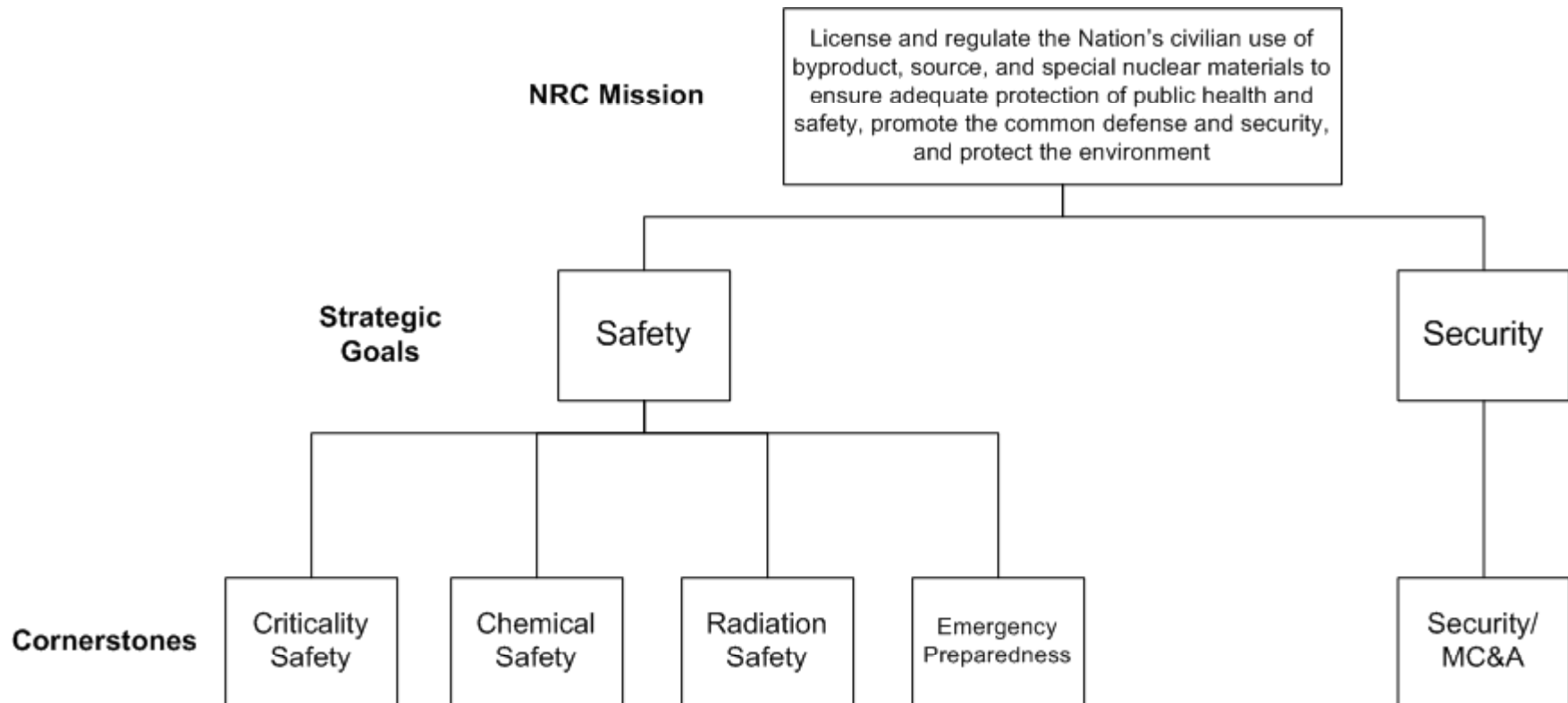
## Cornerstones

Douglas Collins



# Cornerstones – Option A

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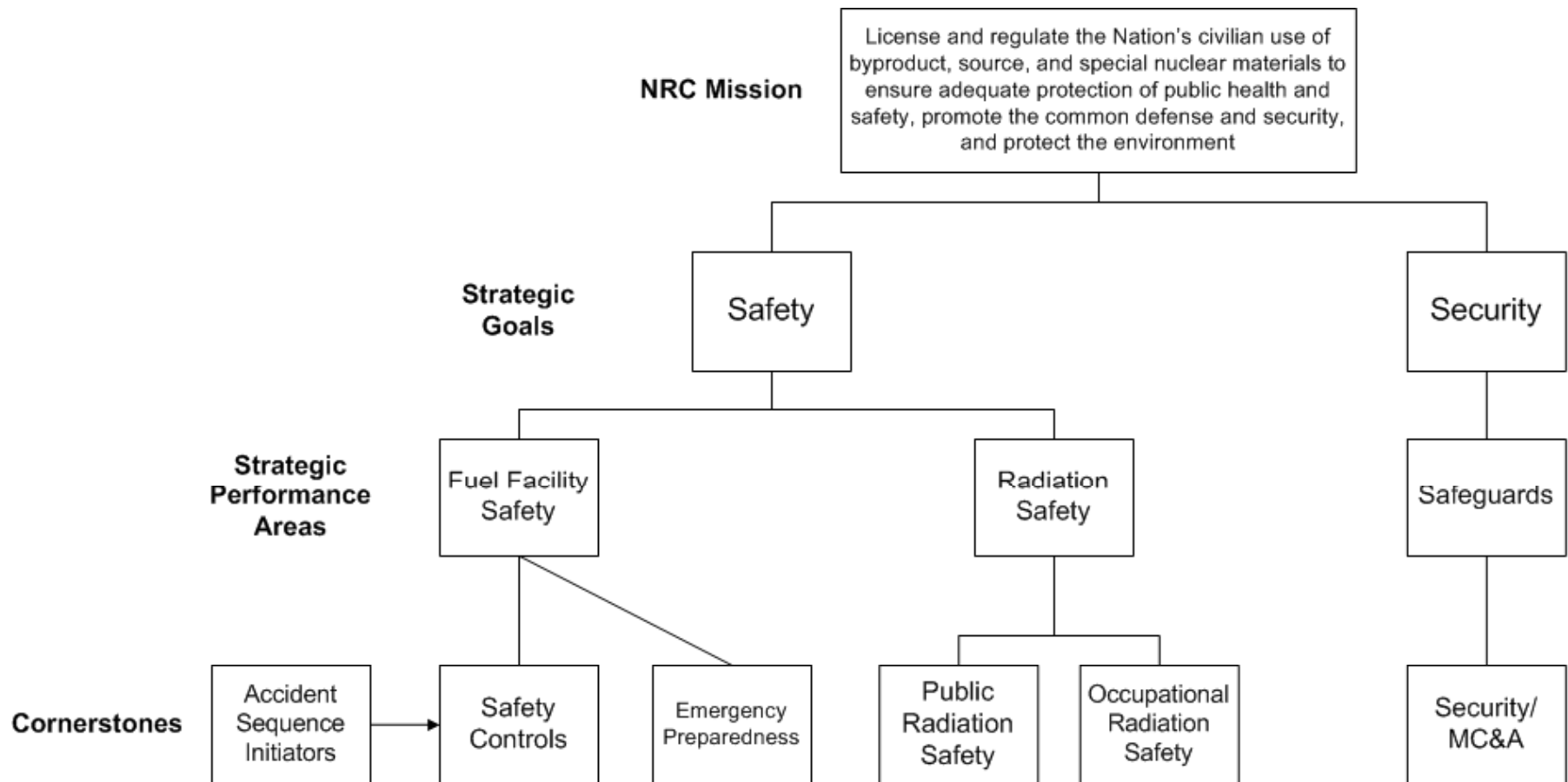
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**Cross Cutting Areas**

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# Cornerstones – Option B



----- Cross Cutting Areas -----





# Accident Sequence

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- ▶ An accident sequence involves an initiating event, any factors that allow the accident to propagate (enablers), and any factors that reduce the risk (likelihood or consequence) of the accident (controls).



# Accident Sequence

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## ▶ Accident Sequence

- Initiating events – the failure of device or feature of the process (process upsets) or external events.
- Enablers - any factors that allow the accident to propagate.
- Controls -any factors that reduce the risk (likelihood or consequence) of the accident.
- Consequence of concern – above a certain severity level (intermediate or high consequence)
- Likelihood – non-credible need not be analyzed.



# Accident Sequence Initiators

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- ▶ Initiating events – (1) external events (external to the facility), (2) facility events external to the process being analyzed, and (3) deviations from normal operations of the process (credible abnormal events).
- ▶ Enabling conditions - conditions or assumptions whose increase or change is credible, and, if changed adversely, could cause an increase in accident frequency.
- ▶ Unforeseen events or errors of commission.



# Initiating Events as Accident Frequency Initiators

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- ▶ Not identified in the ISA but should have been.
- ▶ Identified in the ISA, but when the event occurred, an IROFS did not perform as analyzed and relied on in the ISA.
- ▶ The severity or the frequency of the event is more than assumed in the ISA due to a deficiency.



# Enabling Conditions as Accident Sequence Initiators

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- ▶ Conditions or assumptions whose increase or change is credible.
- ▶ If changed, could cause an increase in accident frequency.
- ▶ For example, the ISA assumes certain conditions must exist to have an accident and these conditions rarely exist. But these conditions become no longer rare.



# Unforeseen Events or Errors of Commission as Accident Sequence Initiators

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- ▶ ISA based on foreseeable failures and errors
- ▶ Experience shows some accident sequences not identified in ISA (for example because the hazard analysis did not identify a potential failure)
- ▶ Experience shows that new accident sequences can develop (if for example configuration control is inadequate or operators use a work-around)



# Accident Sequence Initiators Cornerstone Objectives

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- ▶ The objectives of this cornerstone are to ensure that a licensee:
- ▶ limits the frequency of accident sequence initiators that lead to the need for items relied on for safety (IROFS), nuclear criticality safety (NCS) controls, or other safety controls (non-IROFS controls that are designed to prevent or limit the consequences of accident sequences).



# Accident Sequence Initiators

## Cornerstone Objectives continued

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- ▶ evaluates and limits, as appropriate, accident sequence initiators that are not required to be limited or controlled by IROFS, NCS controls, or other safety controls. (non-IROFS)
- ▶ has identified in the ISA all accident sequence initiators associated with uses of materials licensed under 10 CFR Part 70 and has appropriately assessed the accident sequences to identify those which require IROFS and/or NCS controls to prevent or mitigate intermediate or high consequence events and prevent nuclear criticalities.



# Accident Sequence Initiators Cornerstone Desired Results

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- ▶ Demonstration that there is reasonable assurance that accident sequence initiator frequencies are consistent with the ISA (for both accident sequences that require and do not require IROFS or NCS controls) and that all accident sequence initiators have been identified by the licensee.

# Accident Sequence Initiators Cornerstone Key Attributes

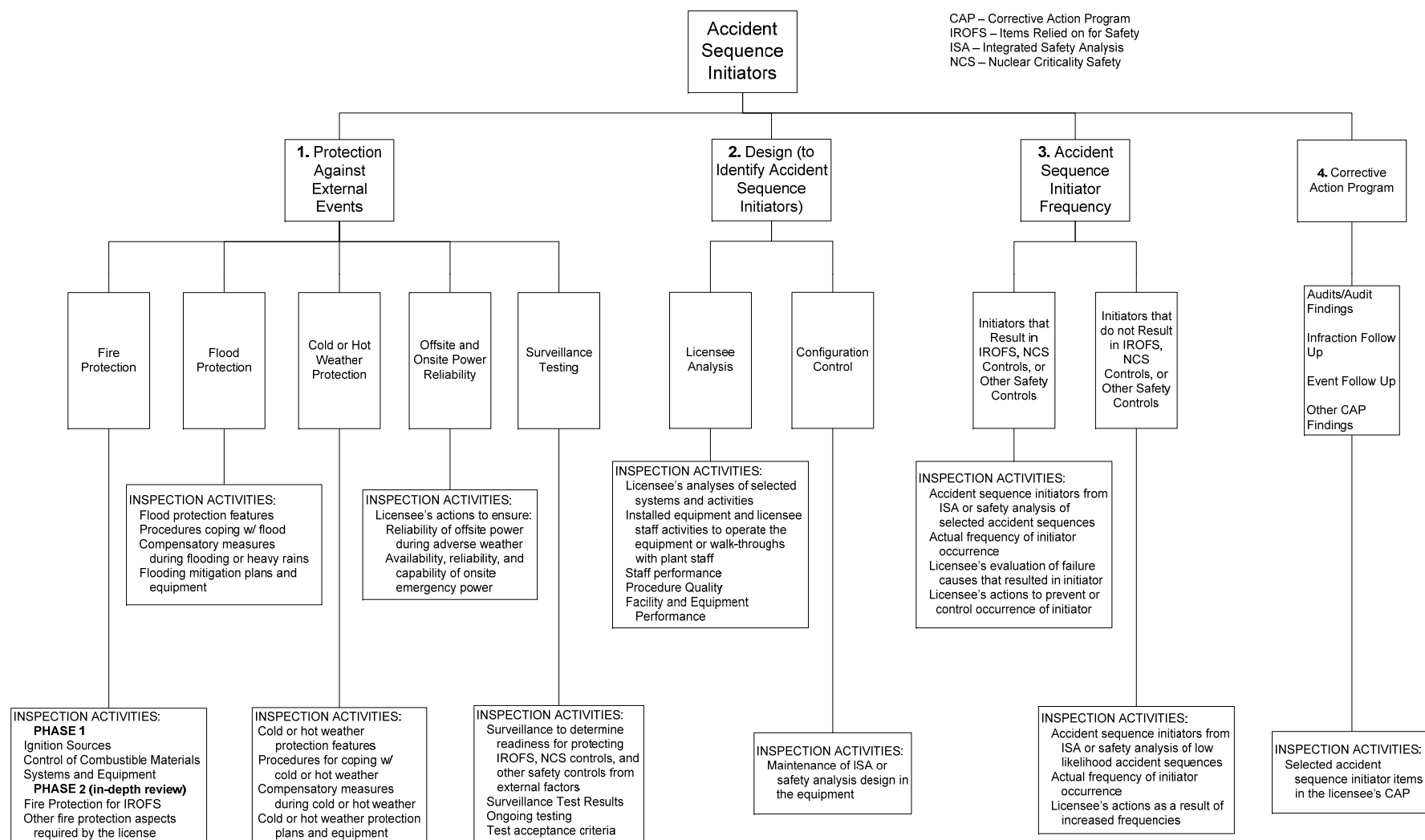
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- ▶ External Events
- ▶ Design (to identify Accident Sequence Initiators)
- ▶ Accident Sequence Initiator Frequency
- ▶ Corrective Action Program



# Accident Sequence Initiators Diagram





# Safety Controls Cornerstone Objective

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- ▶ The objective of this cornerstone is to ensure the availability, reliability, and capability of items relied on for safety (IROFS), nuclear criticality safety (NCS) controls, or other safety controls.

# Safety Controls Cornerstone Desired Results

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- ▶ Demonstration that there is reasonable assurance that intermediate consequence, high consequence, and nuclear criticality accidents will be prevented.



# Safety Controls Cornerstone

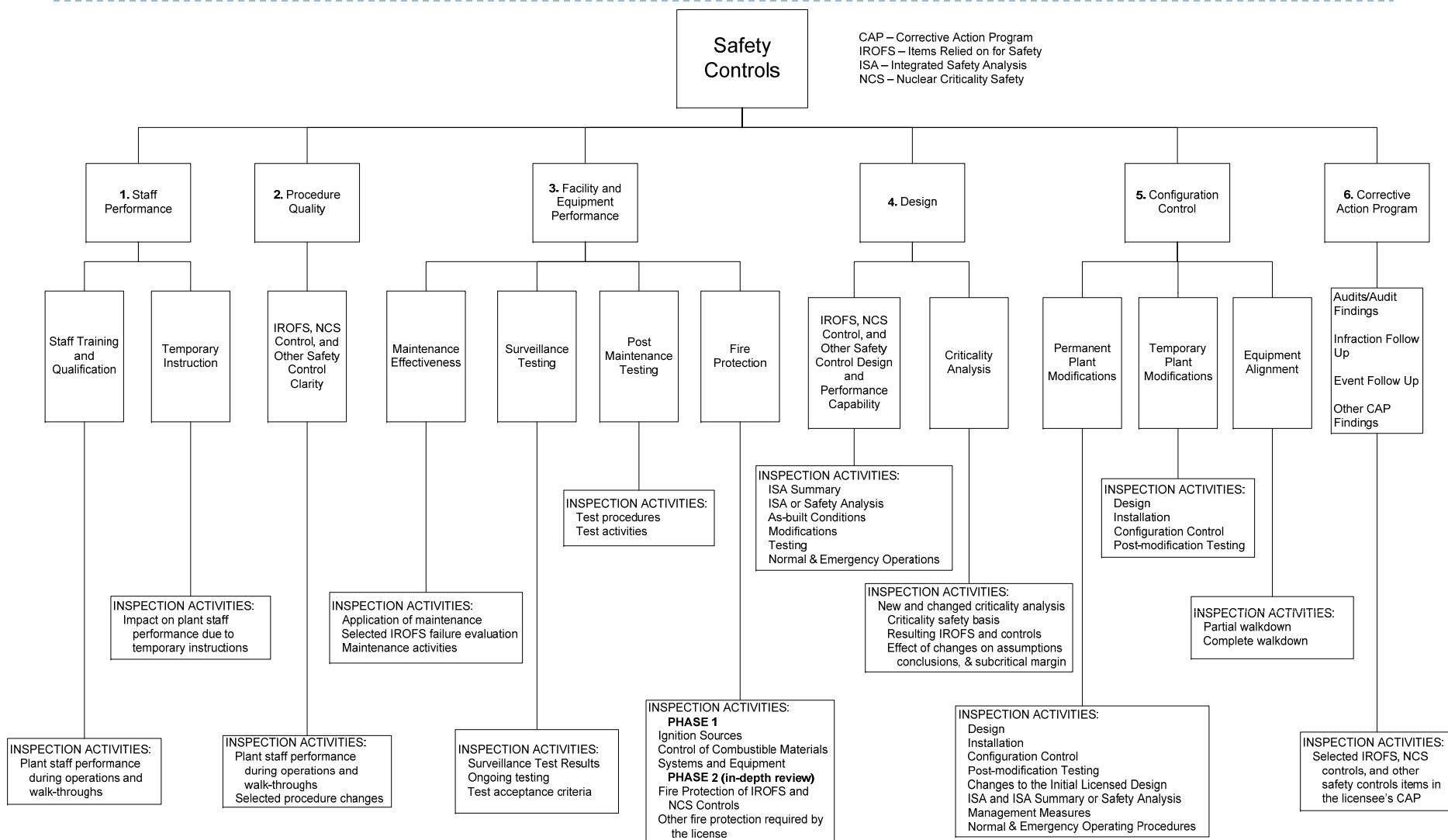
## Key Attributes

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- ▶ Staff Performance
- ▶ Procedure Quality
- ▶ Facility and Equipment Performance
- ▶ Design
- ▶ Configuration Control
- ▶ Corrective Action Program



# Safety Controls Diagram





# Cornerstones Option A versus Option B

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- ▶ Pros and cons for Option A
- ▶ Pros and cons for Option B
- ▶ Overall preference?





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Next Steps



## Next Steps

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- ▶ Further develop cornerstones, revise inspection procedures and manual chapters
- ▶ Develop SDP
- ▶ Development of a performance assessment process
  - ▶ action matrix based on the results of the SDP
  - ▶ cross cutting areas
- ▶ Revise Enforcement Policy



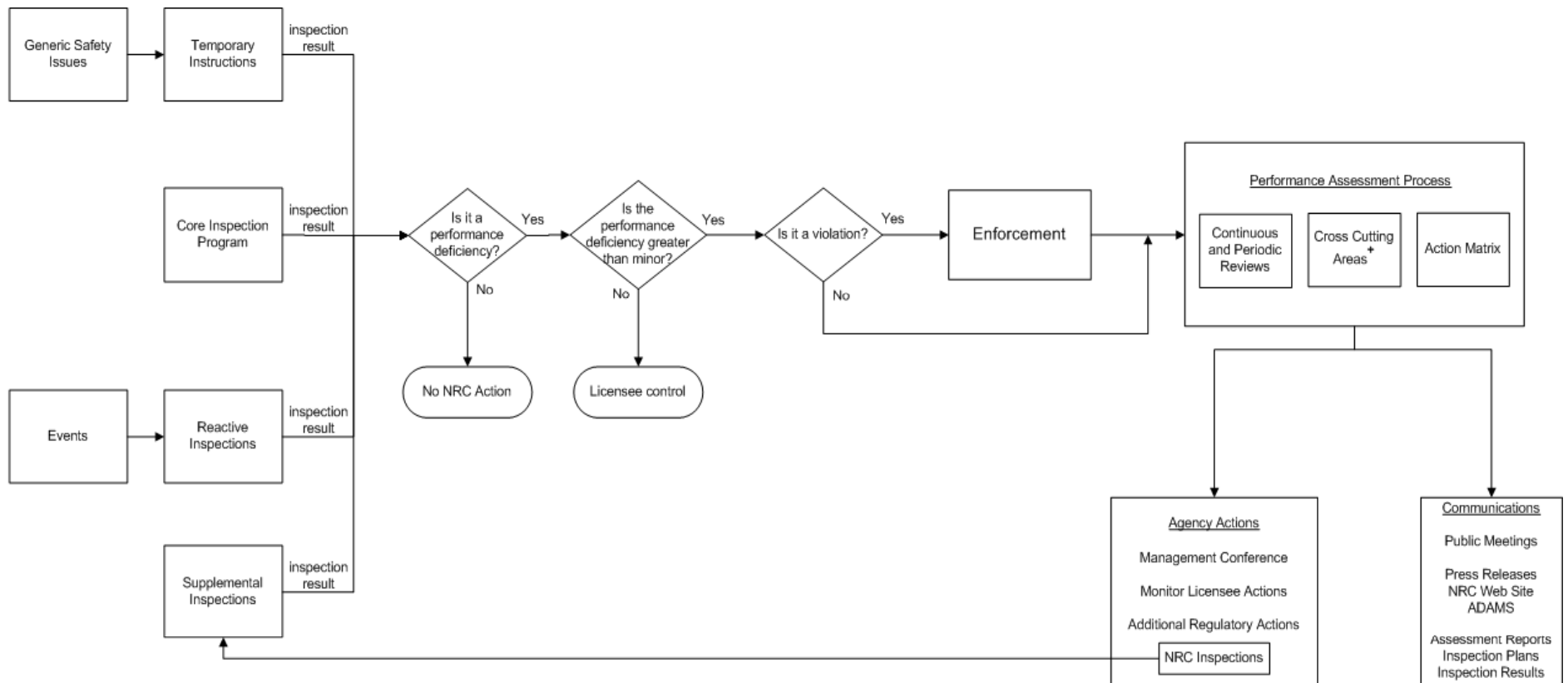
# Alternative

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- ▶ Use cornerstone development effort to inform continuous improvement of inspection procedures and manual chapters
- ▶ Add performance deficiency
- ▶ Develop a performance assessment process with:
  - ▶ an action matrix based on current issue disposition process (i.e., Enforcement Policy)
  - ▶ cross cutting areas
- ▶ Develop supplemental inspection program



# Conceptual Diagram for Alternative



## NOTES:

- This process would apply to licensees with an effective Corrective Action Program (CAP).
- NRC identified inspection findings of very low safety or security significance would be dispositioned as Non Cited Violations (NCVs), if the NRC has determined that the licensee's CAP is effective and the licensee meets the other conditions described in the Enforcement Policy.
- + Informed by Safety Culture Policy Statement
- In addition to disposition findings of very low safety or security significance as NCVs, the NRC would consider a licensee's effective CAP in the performance assessment process and following agency actions.