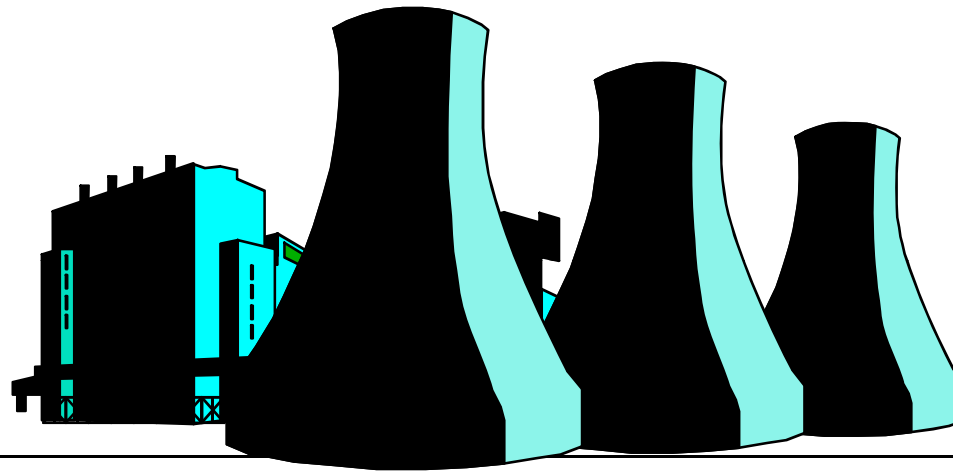




Inspection Process



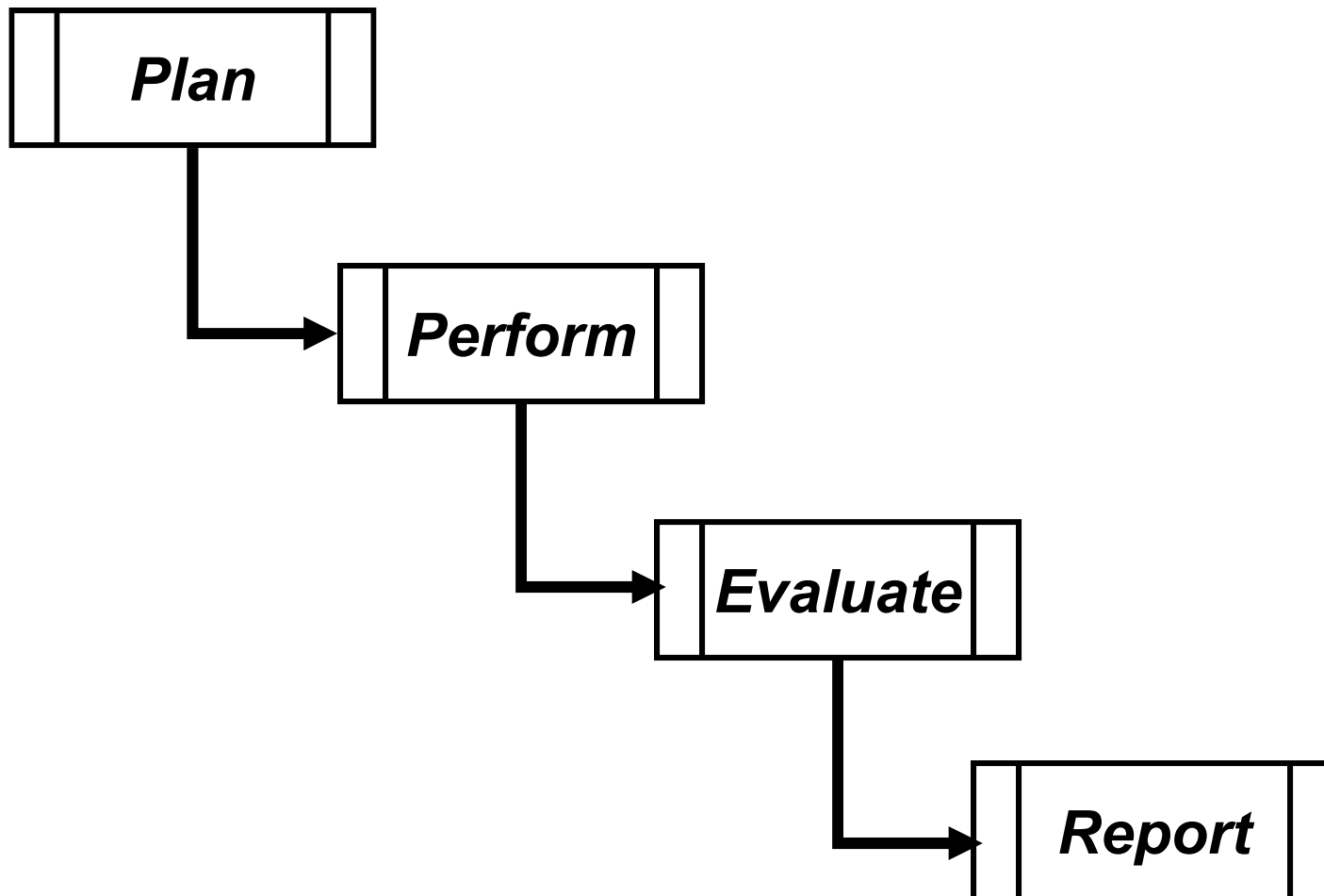


Learning Objectives

- Describe the steps in planning an inspection and the need for such.
- Construct a simple plan for a baseline inspection.
- Describe the inspector's activities involved with actually performing an inspection in the field.
- Describe the evaluation process including the input requirements and output expectations.
- Perform an evaluation of actual inspection results and characterize findings.
- Describe the inspector's responsibilities in reporting inspection results.



Inspection Process Summary





Inspection Planning Overview

- Administrative considerations
- Assemble references
- Determine inspectable area, activities, attributes
- Choose observation methods
- Estimate schedule
- Produce the inspection plan
- Prepare yourself

➤ Now let's explore each step in detail



Administrative Considerations

- Site Access Training
- Good Guy List
- MC 0620, Inspection Documents and Records
 - Obtaining information from the licensee
 - Handling information appropriately
 - Document retention
 - Photos
 - Freedom of Information Act

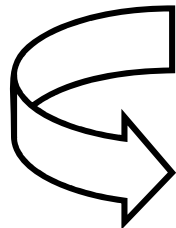


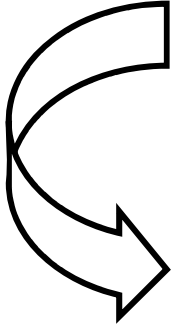
Assemble References

- Inspection Procedure (IP) – primary reference for the entire process
- Design/Licensing Basis Docs – technical information for specific facility
- Licensee information – to update technical understanding
- Licensee Contacts – those who can provide on-site inspection support
- Internal Sources – personal, management, peer, ROP Digital City, Best Practices manual, etc.



Determine Inspectable Area, Activities, Attributes

 Inspectable Area: Identified by IP

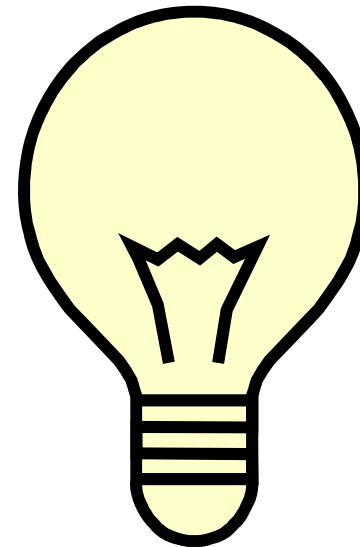
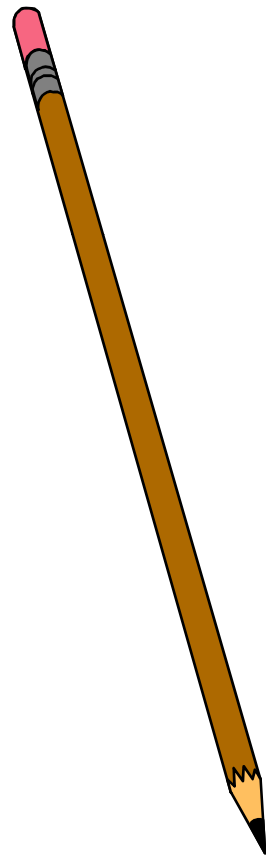
 Activity: Licensee work tasks within an inspectable area chosen by the inspector

 Attribute: observable aspects of activities chosen by the inspector.



Workshop #1

Activity and Attribute Selection





Choose Observation Methods

Direct observation



Indirect observation:

- Interview licensee personnel
- Review of activity documents
- Demonstration or walk-through
- Independent measurement or calculation



Estimate Schedule

- Estimate time to...
 - personally prepare for inspection (Prep)
 - make observations and develop issues (Direct Inspection (DI))
 - screen issues for significance (DI)
 - process findings through the significance determination process (SDP)
 - compile and document necessary information in support of findings (Doc)



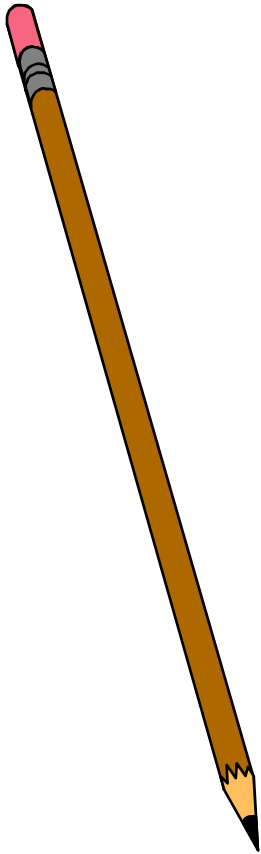
Produce The Inspection Plan

- Scope of inspection that shows...
What...Who...Where...When...How...
- Flexible enough to allow alternate observations during work delays
- Format not as important as the thought process involved in developing the plan.



Workshop #2

Produce Inspection Plan





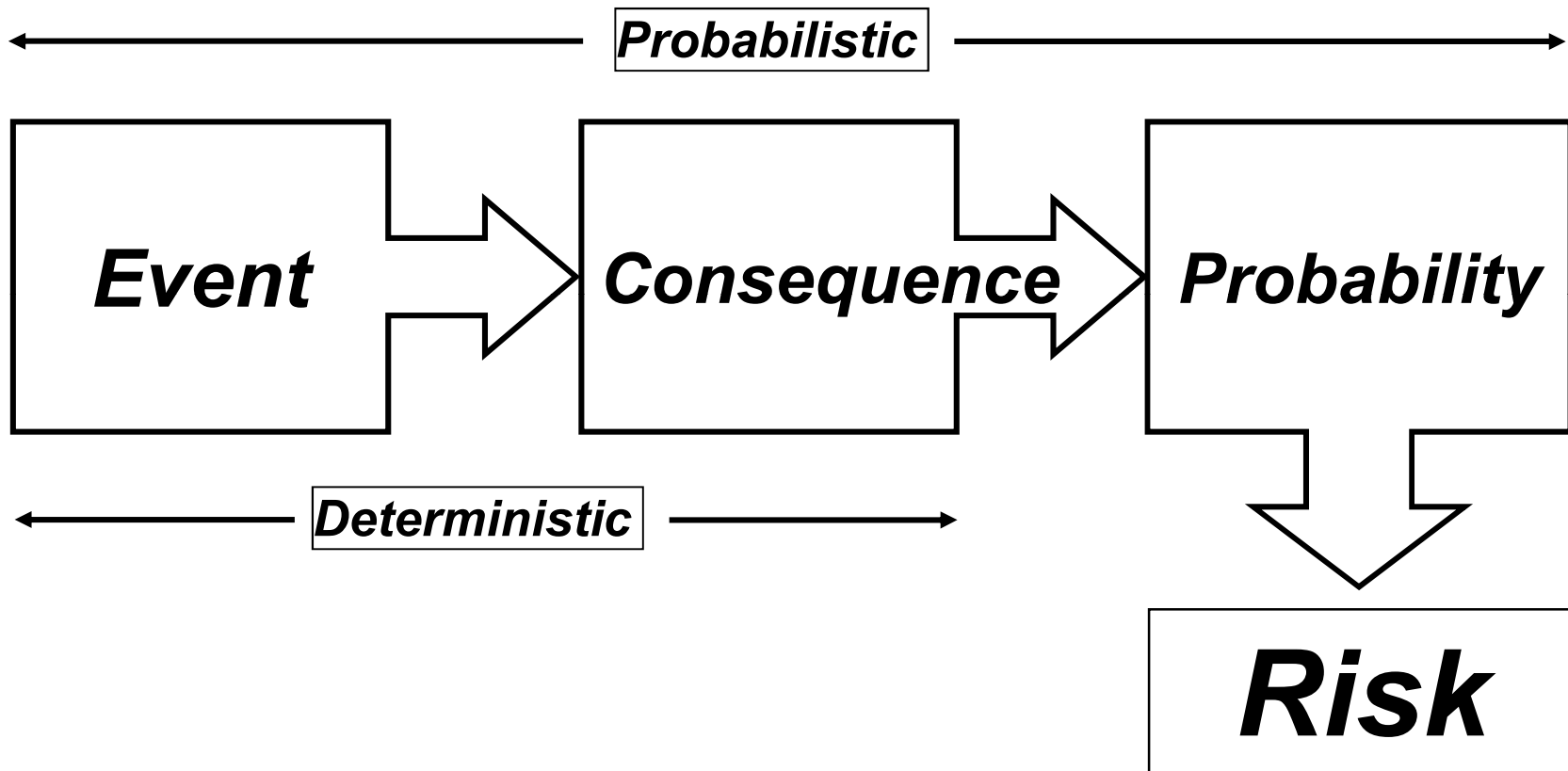
Prepare Yourself

Think through the key concepts involved with risk-informed performance based inspections such as:

- Risk insights
- Performance factors
- Inspection emphasis and sequence
- Recent and historical operating experience



Risk Insights



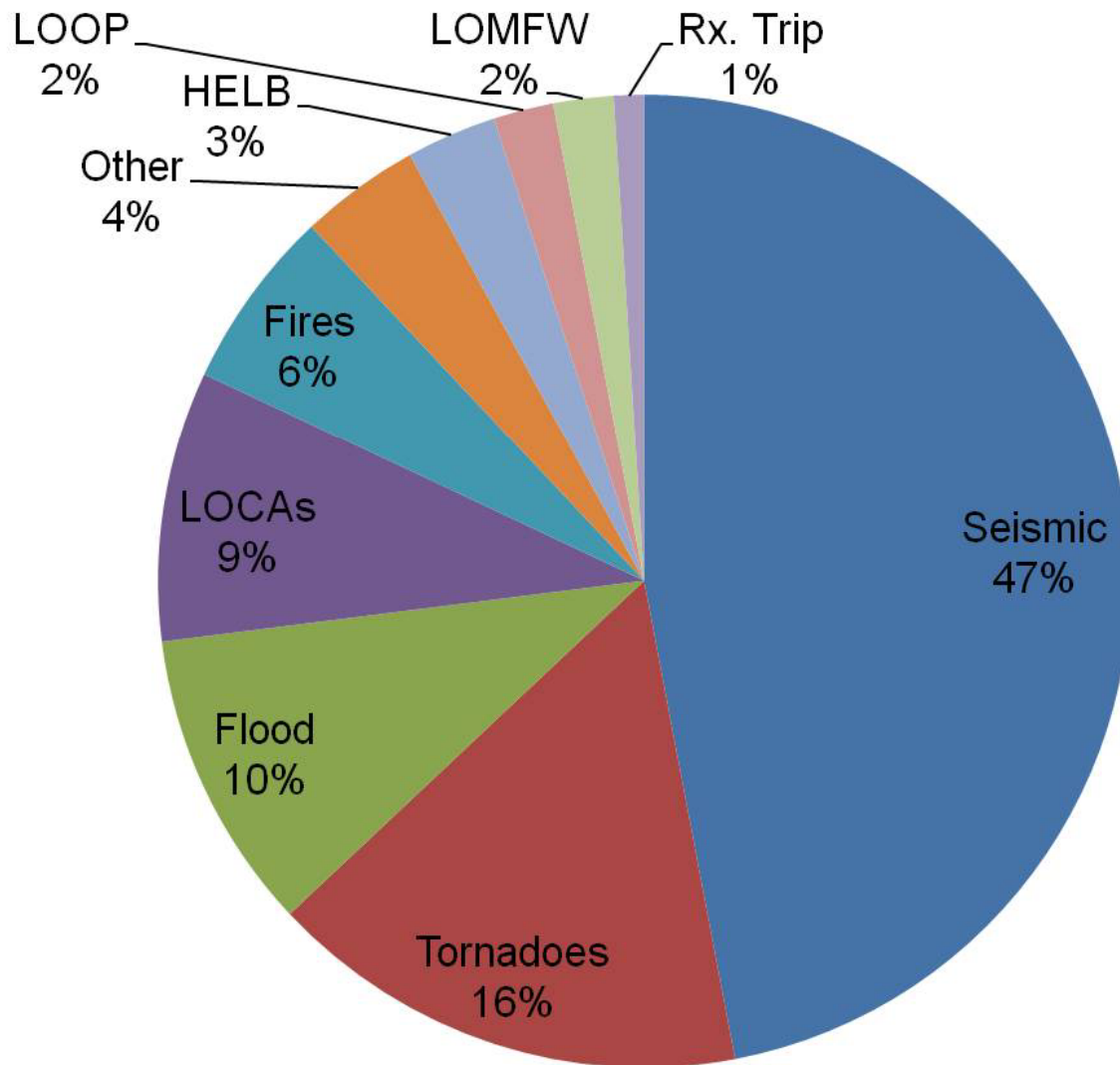


Risk Applications/Uses

- Inspection Planning
- Technical Guidance 9900, Notice of Enforcement Discretion (NOED)
- MC 0309, Reactive Inspection Decision Basis for Reactors (a.k.a., MD 8.3, NRC Incident Investigation Program)
- MC 0609, Significance Determination Process
 - MD 8.3 evaluations and SDPs use different assumptions and are not interchangeable



Inspection Planning- Sample Plant PRA Results

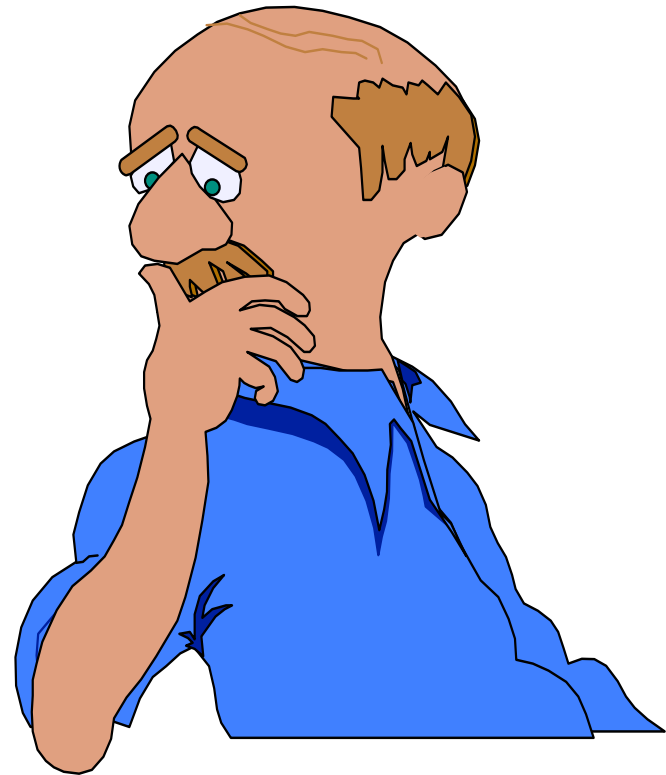


- “At-Power” Risk Only
- Core Damage
Frequency = $5.9\text{E-}5$ /yr
(1 in 17,000 yrs.)
- % = Percent of total
Core Damage
Frequency due to this
accident class



Inspection Planning- What should I Inspect?

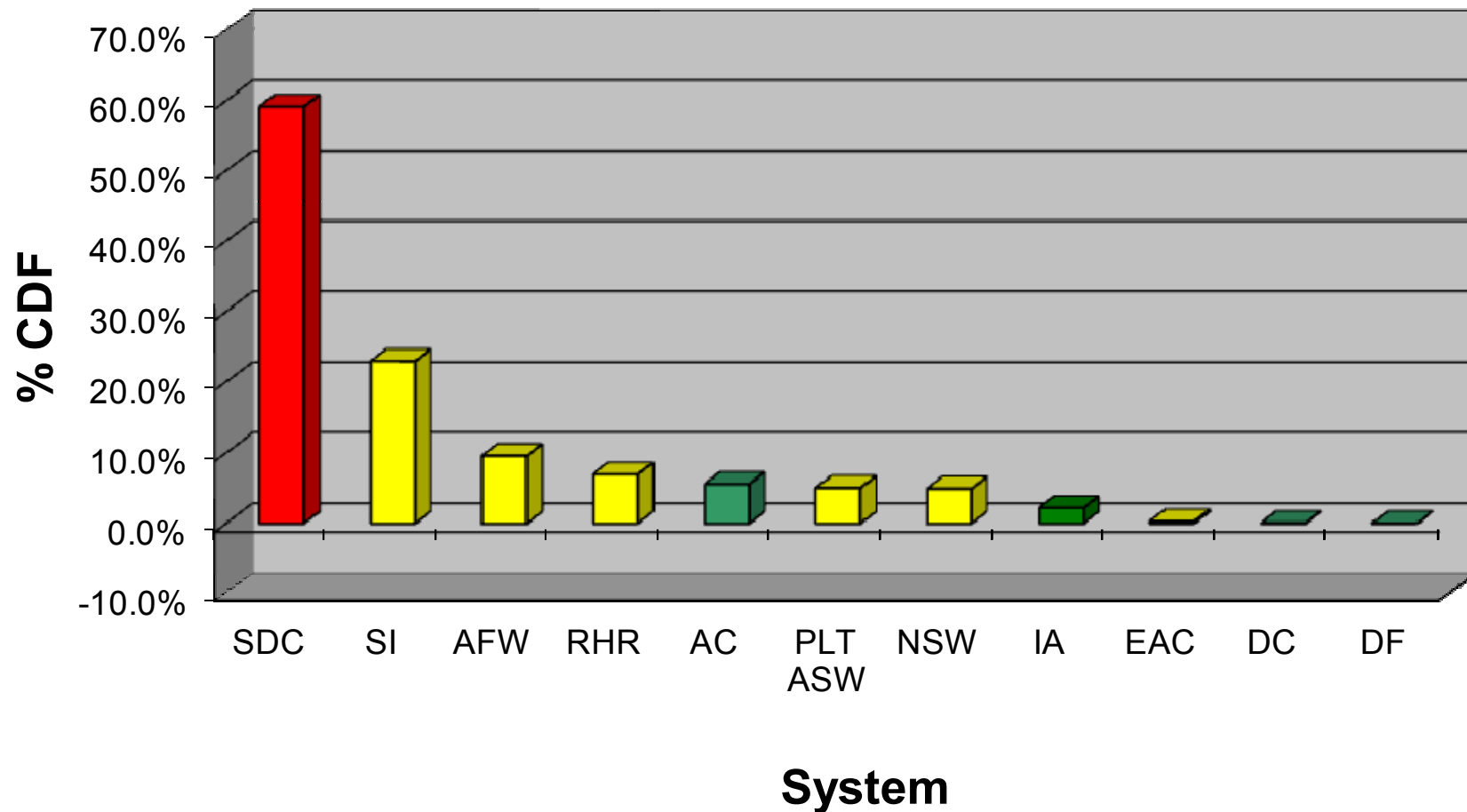
- So where should an inspector focus their inspection efforts?
- What is the most important accident mitigation system?
- *It depends on how you look at it. . .*





Inspection Planning- System Importance

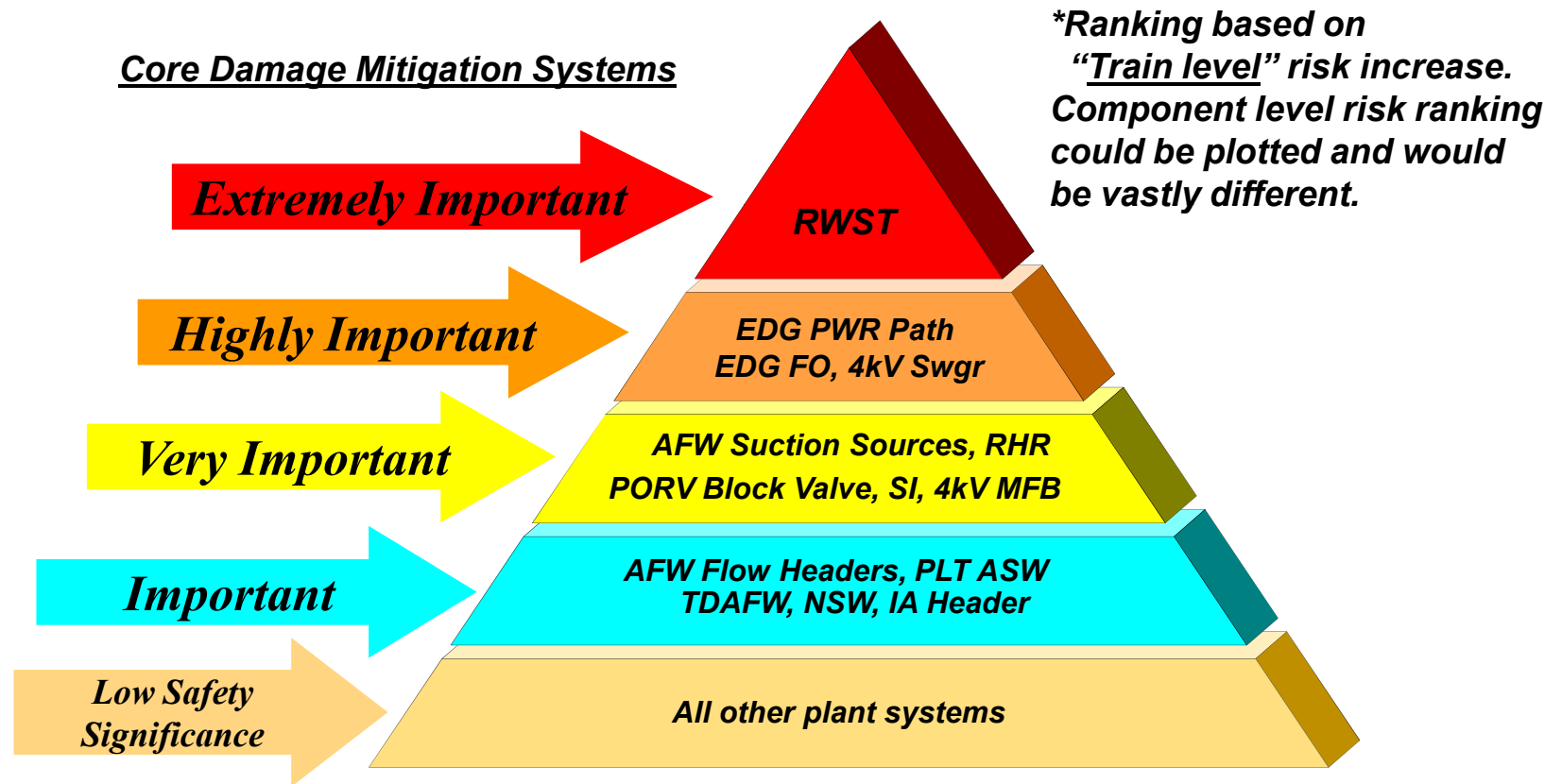
Bar Colors Represent System Health "Color"
PRA System Ranking As A Percentage Of CDF





Inspection Planning- Important Systems & Equipment

Based on the PRA results, the following systems and components were found to have the highest risk impact when removed from service.





Inspection Planning- Important Operator Actions

*Operator actions found to have the highest risk impact
(aka, Time Critical Operator Actions).*

Operator Action	Event or Sequence
Activate the SDC	Loss of all AC power, TB Flood
Initiate High Pressure Recirculation	Small or Medium LOCA, TB Flood
Throttle HPI Following Transient	Spurious Injection, Excessive Feedwater, MSLB (Overcooling)
Align AFW From Another Source	Loss of 4kV Switchgear
Align PLT ASW for Feedwater	TB Flood, Tornado, TB Fire
Refill the RSV Storage Tank	Turbine Building Flood
Realign Power to HPI Pumps from ASW Swgr	Tornado
Isolate Letdown	Small or Medium LOCA
Align Long-Term AFW Makeup Source	Loss of MFW, LOOP, other...
Reestablish Off-site Power Supply	Loss of Off-site Power
Initiate Low Pressure Recirculation	Large LOCA



Performance Factors

Program in Place

+

Program Executed

+

Compliance Achieved

+

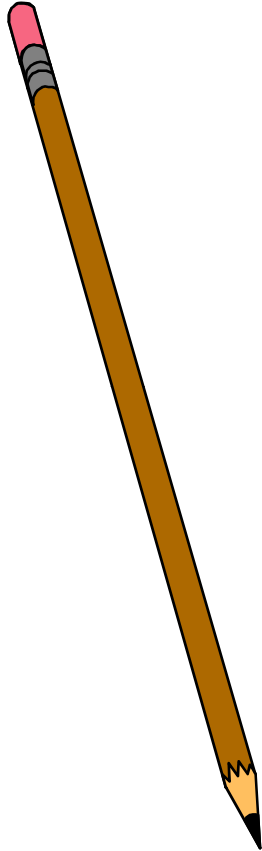
Safety Achieved

Importance



Workshop #3

Brown's Ferry Case Study





Perform the Inspection – General Considerations

Maintain Objectivity (MC 0102, Oversight and Objectivity of Inspectors and Examiners at Reactor Facilities and various ROIs)

Objectivity is the extent to which the inspector or examiner implements the NRC's programs, interfaces with the public and conducts both personal and work relationships in an unbiased manner, free from both partiality and antagonism toward a licensee or vendor, or the employees of a licensee or vendor, as evidenced by patterns of the inspector's or examiner's actions.

- Being fair and balanced goes a long way towards credibility with a licensee.
- Remember, perception might as well be reality.

Inspector conduct and conformance to licensee standards

➤ Let's review 10 CFR 50.70, Inspections



Perform the Inspection – General Considerations

Employee Conduct, MC 1201, Conduct of Employees

- Alcohol consumption
- Relationships (e.g., personal, formal, neighborhood)
- Community involvement (e.g., scouts, church)
- Family restrictions
- Employment of spouse/children
- Gifts from regulated sources and limitations
- Gifts between NRC employees
- Conflicting financial interests
- Seeking licensee employment
- Misuse of government position
- Gambling
- Political activities

➤ Again, perception might as well be reality



Perform the Inspection – General Considerations

Keep the agency informed

Senior resident is responsible for the NRC's onsite presence. Make sure the senior resident is aware of what you're doing and what you're finding.

Keep your supervisor involved

Inspectors should know the difference between agency decisions and inspector decisions. When you are not sure where you stand, talk to your supervisor.

No surprises for the licensee

Keep the licensee informed so that there are no surprises at the exit meeting or in the report.

Source: MC 2515, LWR Inspection Program – Operations Phase, dated 9/24/09, IP 30703, Management Meetings – Entrance and Exit Interview, as well as various ROIs



Perform the Inspection – General Considerations

Handling Allegations (MD 8.8, Management of Allegations)

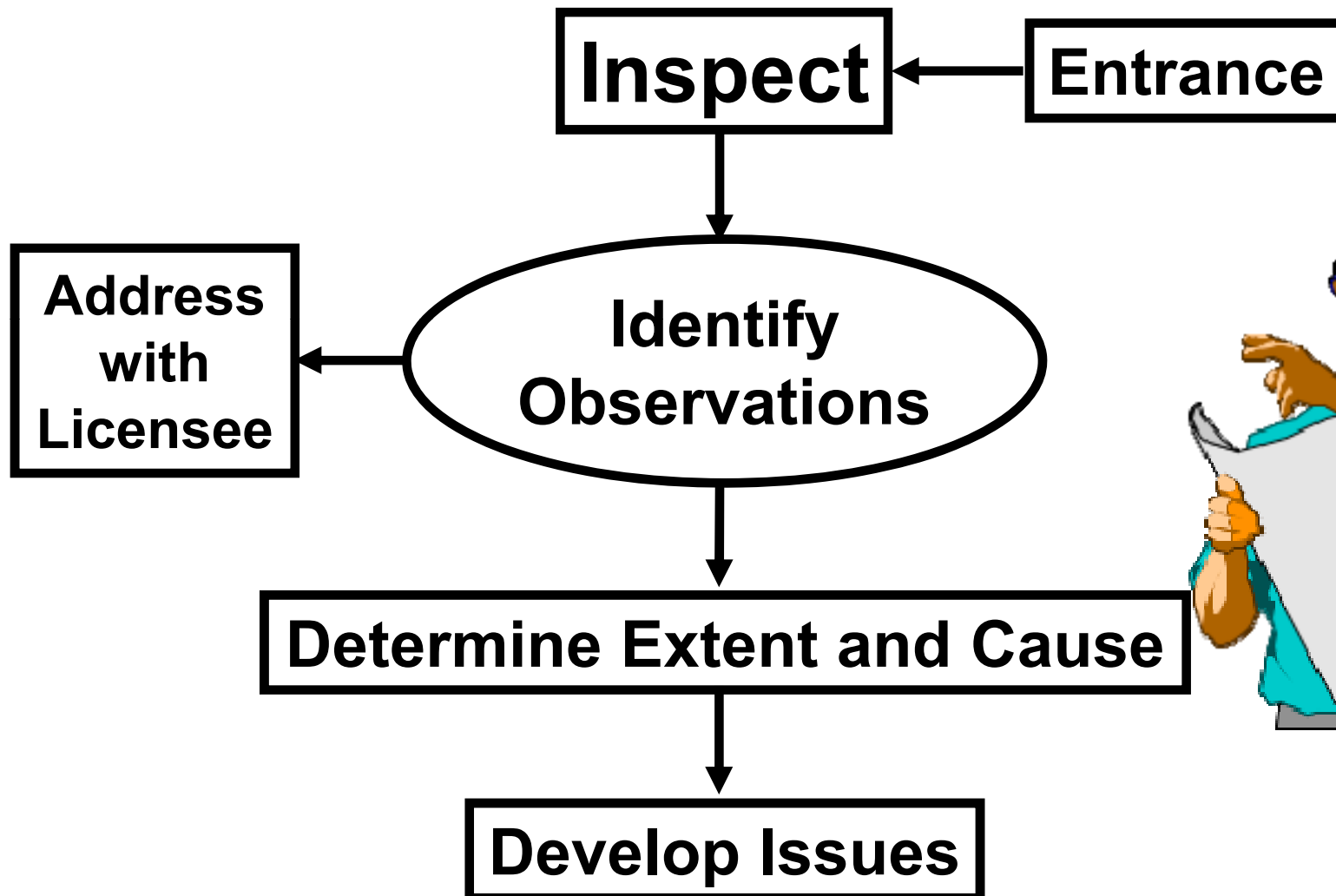
Listen carefully to what the alleged has to say. Accurately and completely communicate the allegation to your supervisor and continue the inspection unless otherwise directed by your supervisor. If confirming an allegation by field observation, make sure that you don't inadvertently disclose the identity of the alleged.

Media Inquiries

Notify your Public Affairs Officer and proceed accordingly. Remember, nothing is off the record and the camera is always running. Whatever you say or do can be edited to portray a negative outcome.



Execute the Inspection Plan





The Entrance Meeting

Planned in advance

Inspector and licensee should know the scope and approach for the inspection

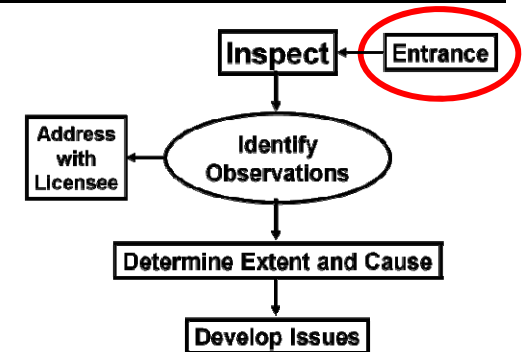
Keep it simple

What is to be inspected in terms of:

- Inspection Procedure that you will be using
- Activities to be observed
- Records to be reviewed
- Personnel to be interviewed

Relevant problems known to licensee

- Those things that may impact the scope or approach of the inspection.
- Anything else that you should be aware of?





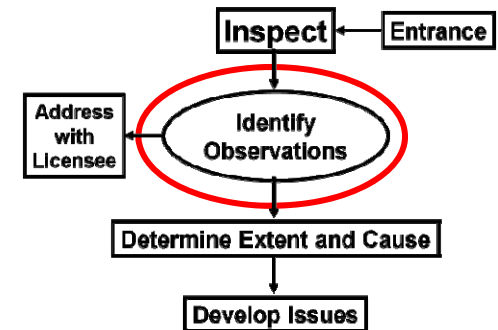
Identify Observations

Factual details noted during the inspection

- **Continue to maintain objectivity**
 - Use independent technical judgment
 - Maintain a questioning attitude and get all of the information needed
 - Ensure that conclusions are based on facts and not feelings
 - Cite examples whenever possible
- **The inspector is not out to...**

“Get” nor commend the licensee, shut the facility down, ensure continued facility operation, or be a consultant for the licensee
- **The inspector is out to...**

Get a full factual understanding of conditions related to the inspection scope.

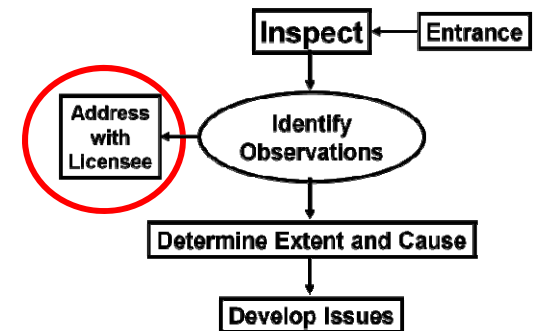




Address with Licensee

Find or request a technical person to discuss details.

- Always, let the licensee know what your concerns are early in the inspection.
- It may be possible for the licensee to resolve the observations (e.g., provide additional information).
- It may be possible for the inspector to convince the licensee that observations are valid.

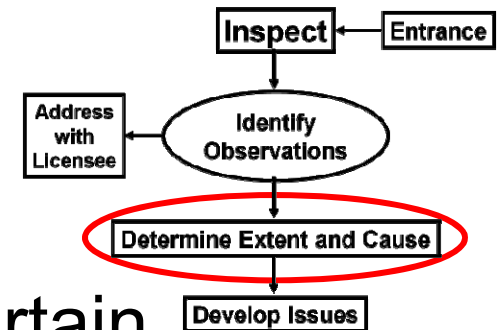




Determine Extent and Cause

Extent:

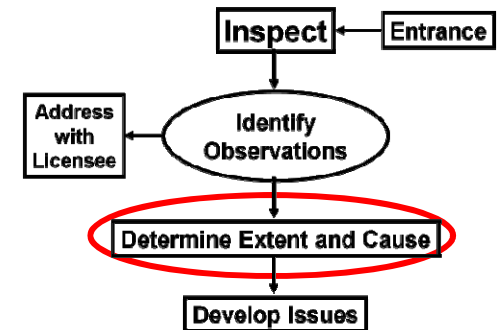
- The observations recur whenever certain workers perform the activity in question
or...
- The observations occur when other workers perform the activity in question
- Status of opposite train, other unit, similar equipment/components, etc.





Determine Extent and Cause

Things needed for evaluation later in the inspection:



- Observed facts from the field, some understanding of extent, and some understanding of cause.
- Without this information, the inspector's ability to evaluate the licensee's problem identification and resolution process will be limited.
- It would also be virtually impossible to accurately identify the cross cutting aspects that may contribute to findings.



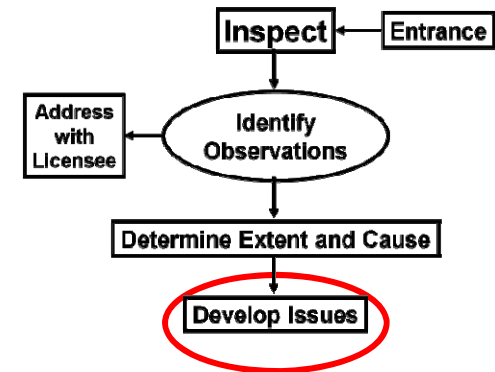
Develop Issues

“Issue of Concern” is defined in MC 0612 as follows:

- A well-defined observation or collection of observations that is of concern and may or may not involve a performance deficiency

The inspector must know the concerns for an observation to be an Issue of Concern.

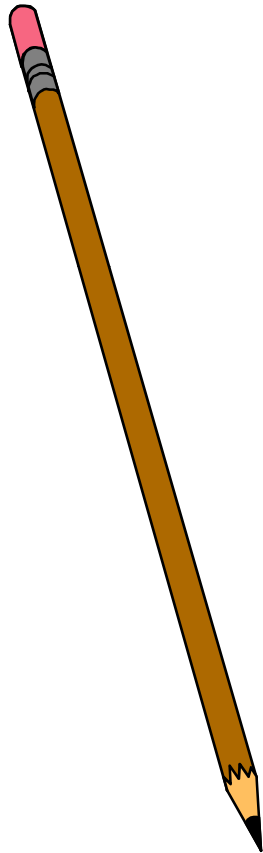
- These must be technical and/or regulatory in nature and not just a personal favorite of the inspector.





Workshop #4

Compile Issues





Key Definitions

Observation:

A factual detail noted during an inspection. Relevant observations are documented to support inspection findings or unresolved items.

Additionally, observations not directly related to a finding may be documented if allowed by an appendix to this chapter or by the specific inspection procedure or temporary instruction.

Issue of Concern:

A well-defined observation or collection of observations that is of concern and may or may not involve a performance deficiency.



Key Definitions

Performance Deficiency:

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.



Key Definitions (cont.)

Finding (FIN):

A performance deficiency of more than minor significance. A finding may or may not be associated with regulatory non-compliance and, therefore, may or may not result in a violation.

Violation (VIO):

The failure to comply with a legally binding regulatory requirement, such as a statute, regulation, order, license condition, or technical specification.

Minor Violation:

A violation that is of such low significance that documentation in an NRC inspection report is not normally warranted (screening criteria is listed in Section 1-3 of Appendix B of 0612). Although minor violations must be corrected, they are not usually described in inspection reports.



Key Definitions (cont.)

NCV

A non-recurring, typically, non-willful, Severity Level IV violation or a non-TE violation typically (but not necessarily) associated with a GREEN ROP FINDING that is not subject to formal enforcement action if the licensee places the violation in a CAP to address recurrence and restores compliance within a reasonable period of time. Provided applicable criteria in the Enforcement Policy and the Enforcement Manual are met, such issues are documented as violations, but are not cited in notices of violation, which normally require written responses from licensees.



Key Definitions (cont.)

Unresolved Item (URI):

An issue of concern about which more information is required to determine:

- a) if a performance deficiency exists,
- b) if the performance deficiency is more than minor, or
- c) if the issue of concern constitutes a violation.

Such a matter may require additional information from the licensee or cannot be resolved without additional guidance, clarification, or interpretation of the existing guidance.

A URI shall not be opened while determining the significance of a finding or violation or while determining whether or not a violation warrants enforcement discretion.



Key Definitions (cont.)

Apparent Violation (AV):

A noncompliance with a regulatory requirement for which an enforcement decision has not been reached.

This interpretation is congruent with discussion in both the Enforcement Policy and the Enforcement Manual and may be used to characterize:

- a) non-compliances associated with ROP findings that are Potentially Greater Than Green or Preliminary Greater Than Green or
- b) more-than-minor violations (with or without associated findings) for which a decision has not been reached regarding enforcement discretion.



Other Definitions

Finding Colors

Green - A finding of very low safety significance as determined by IMC 0609, 'Significance Determination Process.'

White - A finding of low to moderate safety significance as determined by IMC 0609, „Significance Determination Process.'

Yellow - A finding of substantial safety significance as determined by IMC 0609, „Significance Determination Process.”

Red - A finding of high safety significance as determined by IMC 0609, 'Significance Determination Process.'



Other Definitions

Identification Credit, including:

- Licensee Identified Violation (LIV)

For the purpose of this inspection manual chapter (IMC), “licensee-identified” findings are those findings that are neither NRC-identified nor self-revealing. Most, but not all, licensee-identified findings are discovered through a licensee program or process.

- Documented in a separate section of the inspection report (4OA7).
- Documented in a truncated format (i.e., not four part format).
- Not candidates for cross-cutting aspects



Other Definitions

Identification Credit, including:

- NRC- Identified

Findings or violations, found by NRC inspectors, of which the licensee was not previously aware or had not been previously documented in the licensee's corrective action program.

NRC-identified findings also include previously documented licensee findings to which the inspector has significantly added value.

- Added value means that the inspector has identified a previously unknown weakness in the licensee's classification, evaluation, or corrective actions associated with the licensee's correction of a finding.



Other Definitions

Identification Credit, including;

- Self Revealing

For the purpose of screening and documentation in the ROP, self-revealing findings are those findings developed from issues that become self-evident and require no active and deliberate observation by the licensee or NRC inspectors to determine whether a change in process or equipment capability or function has occurred. Self-revealing issues become readily apparent to either NRC or licensee personnel through a readily detectable degradation in the material condition, capability, or functionality of equipment or plant operations and require minimal analysis to detect. Self-revealing findings are derived from self-revealing issues and are treated similarly to NRC-identified findings for the purposes of screening and documentation.



Willfulness

The terms “willful” or “willfulness,” as used in this IMC, refer to conduct involving either a careless disregard for requirements or deliberate intent to violate requirements or falsify information.

Willful violations are of particular concern to the Commission because its regulatory program is based on licensees and their contractors, employees, and agents acting with integrity and communicating with candor. A violation may be considered more significant than the underlying noncompliance if it includes indications of willfulness.

See 10 CFR 50.5, 'Deliberate misconduct,' for associated regulations.



Willfulness (cont.)

The term "willfulness" as used in the Enforcement Policy embraces a spectrum of violations ranging from deliberate intent to violate or falsify to and including careless disregard for requirements.

Willfulness does not include acts which do not rise to the level of careless disregard, e.g., negligence or inadvertent clerical errors in a document submitted to the NRC.



Willfulness (cont.)

All IOC's are screened by inspectors for indications that the IOC may warrant a closer review by an ARB for potential willful violation. Those IOC's forwarded to the ARB are the product of a preliminary screening determination by inspectors and regional management that (a) the IOC involves a VIOLATION and (b) a sufficient basis exists to warrant ARB review.

IOC's forwarded to the ARB in this way are said to exhibit potential willfulness. The determination of willfulness is, however, a legal decision that can only be made by the Office of General Council using facts developed during an investigation conducted by the Office of Investigations, normally conducted at the recommendation of the ARB.



Deliberate Misconduct

§ 50.5 Deliberate misconduct.

- (a) Any licensee, applicant for a license, employee of a licensee or applicant; or any contractor (including a supplier or consultant), subcontractor, employee of a contractor or subcontractor of any licensee or applicant for a license, who knowingly provides to any licensee, applicant, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's or applicant's activities in this part, may not:
 - (1) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license issued by the Commission; or
 - (2) Deliberately submit to the NRC, a licensee, an applicant, or a licensee's or applicant's contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the NRC.



Deliberate Misconduct (cont.)

§ 50.5 Deliberate misconduct (cont.)

(b) A person who violates paragraph (a)(1) or (a)(2) of this section may be subject to enforcement action in accordance with the procedures in 10 CFR part 2, subpart B.

(c) For the purposes of paragraph (a)(1) of this section, deliberate misconduct by a person means an intentional act or omission that the person knows:

- (1) Would cause a licensee or applicant to be in violation of any rule, regulation, or order; or any term, condition, or limitation, of any license issued by the Commission; or
- (2) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, applicant, contractor, or subcontractor.



Careless Disregard

Careless Disregard

Refers to situations in which an individual acts with reckless indifference to at least one of three things:

- the existence of a requirement,
- the meaning of a requirement, or
- the applicability of a requirement.



Careless Disregard (Cont.)

Careless Disregard

Careless disregard occurs when an individual is unsure of the existence of a requirement, the meaning of a requirement, or the applicability of the requirement to the situation, but nevertheless proceeds to engage in conduct that the individual knows may cause a violation. Although aware that the action might cause a violation, the individual proceeds without first ascertaining whether a violation would occur.



Material False Statements

§50.9 Completeness and accuracy of information.

- (a) Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material respects.
- (b) Each applicant or licensee shall notify the Commission of information identified by the applicant or licensee as having for the regulated activity a significant implication for public health and safety or common defense and security. An applicant or licensee violates this paragraph only if the applicant or licensee fails to notify the Commission of information that the applicant or licensee has identified as having a significant implication for public health and safety or common defense and security. Notification shall be provided to the Administrator of the appropriate Regional Office within two working days of identifying the information. This requirement is not applicable to information which is already required to be provided to the Commission by other reporting or updating requirements.



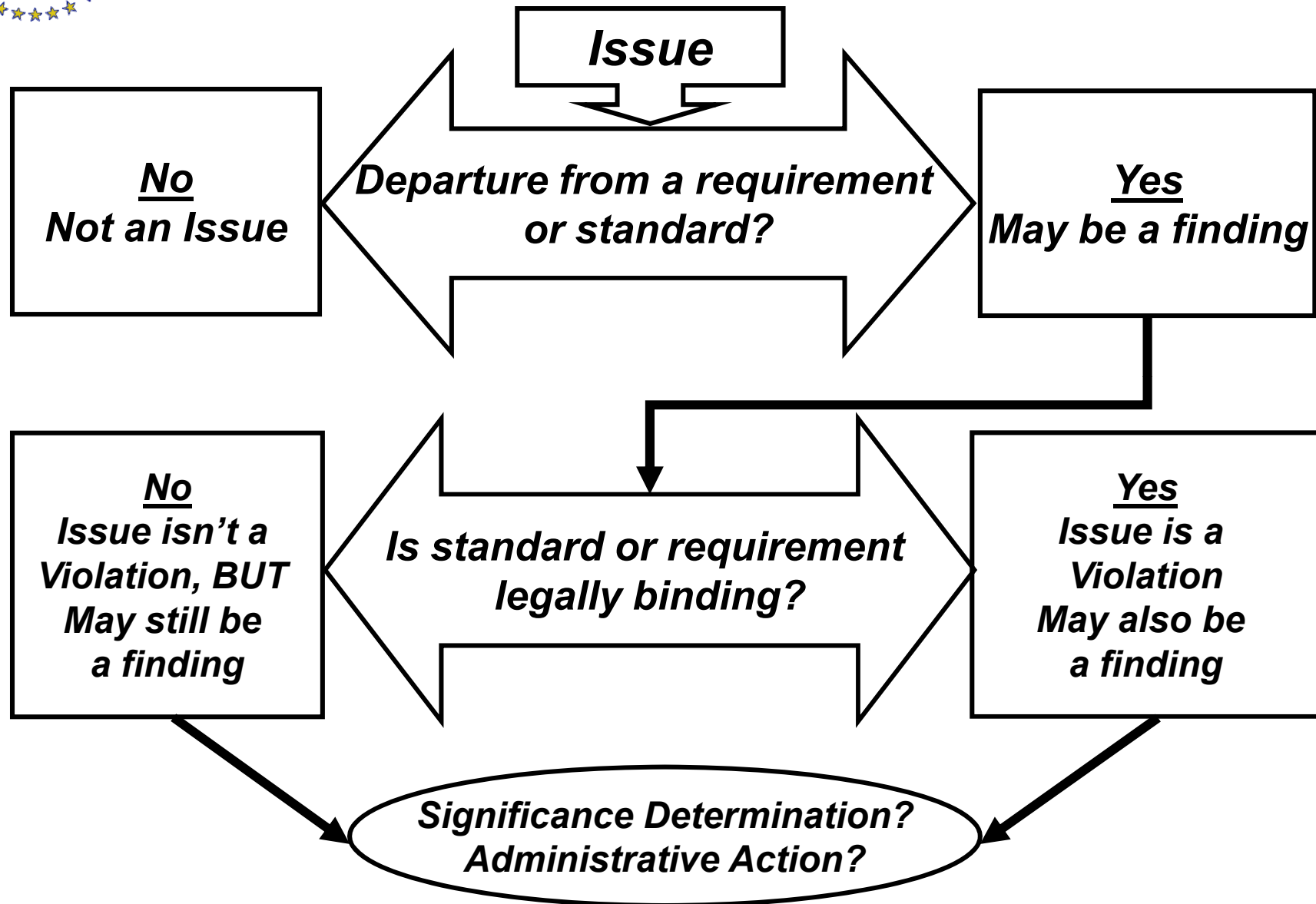
Evaluate

Form the foundation for any IOCs

- Regulatory standards
 - what was the requirement or standard?
(MC 0612, App B)
- Cross cutting aspects
 - what was the most significant causal factor of the performance deficiency?
(MC 0310)



Regulatory Standards (simplified)





Cross Cutting Aspects

The cross-cutting aspects of findings provide insight necessary to include safety culture considerations in the assessment process as described in MC 0305 (e.g., Mid-Cycle and End-of-Cycle Assessment meetings).

- When performing baseline inspections, inspectors should identify any cross-cutting aspects associated with potential inspection findings so that the required information can be discussed in the exit meeting and included in the inspection report.
- When performing supplemental or special inspections in response to assessment results, inspectors will be focusing more directly on safety culture components as directed by the appropriate inspection procedure.
- Cross-cutting aspects are important considerations in developing a complete understanding of causes for findings in all types of inspections.

[illegible]



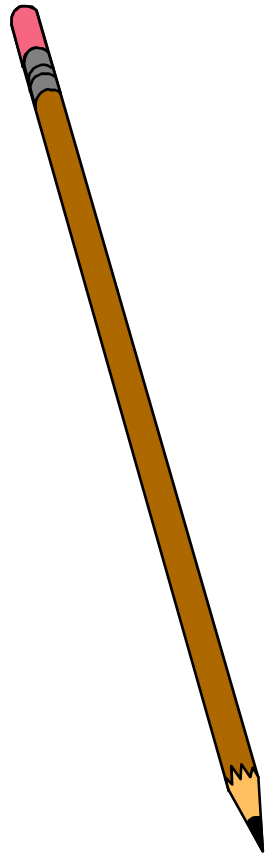
Regulatory Standards

- Do you have an Issue of Concern (IOC)?
- Possible Willfulness involved ?
 - If so, ARB (OI involvement and determine if PD development can proceed)
- Screen for Performance Deficiency (PD)
- Screen for possible Traditional Enforcement
 - Actual Safety Consequences?
 - Impact on Agency Process?
- Screen PD for more than minor (i.e., do you have a Finding?)
 - Compare with MC 0612, App E minor examples
 - More than minor questions (block 9 of MC 0612, App B)
- Determine risk significance of Finding using MC 0609
- Determine if a Cross-Cutting Aspect application is appropriate for the Finding
- Determine if a violation exists
- Document as appropriate and required by MC 0612 (e.g., LIV, NCV, URI, AV, NOV)



Workshop #5

Issue Disposition Screening





Report

Two parts to formal reporting phase:

- Presentation of results at the exit meeting
- Documentation of results in an inspection report



The Exit Meeting

Planned in advance

- Carefully consider results before presenting
- Inspector's view of results

Keep it simple

- Brief restatement of scope and findings
- Based on sound facts and observations
- Present cross cutting aspects of findings
- Inspector's overall conclusions
- All results are pre-decisional - let licensee know if changes occur later in the process (i.e., re-exit).



Inspection Report Objectives

- Official record of the inspection results and provides the basis for program completion.
- Clearly communicate significant inspection results in a consistent manner to licensees, NRC staff, and the public.
- Document the basis for significance determination and enforcement action.
- Provide inspection results as one input into the Operating Reactor Assessment Program (IMC 0305) of the Reactor Oversight Process.



Inspection Report Writing

- Past Tense (“was” vs. “is”)
- Active Voice (subject acts on object)
- Third Person (“inspectors” vs. “we”)
- Plain English (direct, factual, objective – all at a 10th grade English)
- Relevant facts and observations
- Do not document the inspector’s time
- Not a story book or a history lesson
- Not a forum for personal opinions



Standard Inspection Report Outline

- Cover Letter
- NOV (if applicable)
- Cover Page
- Table of Contents (optional)
- Summary of Findings
- Summary of Plant Status
- Report Details
- Exit Meeting
- Report Attachments

Source: MC 0612 Exhibit 1 – Standard Reactor Inspection Report Outline, dated 11/15/11



Report Detail Organization

Strategic Performance Areas (SPAs)

- Reactor Safety (IE, ME, BI, EP)
- Radiation Safety (OS, PS)
- Safeguards (Physical Protection)
- Other Activities

Inspectable Areas within each SPA

- Inspection Scope
- Findings



Scope

- How was the inspection conducted, that is, what method of inspection was used (e.g., direct, indirect, record review, etc).
- Identify what was inspected
- Inspection objectives and criteria
- Include inspection dates to clarify inspection scope context (e.g., for event follow-up scopes)



Findings

Each finding is formatted into four parts:

1. Introduction - One or two sentences that provide the overall “bottom line” results of the inspection.
2. Description - Describe the performance deficiency that forms the basis for the finding. Level of detail should be consistent with complexity of the finding.
3. Analysis - Describe the SDP logic used such that a knowledgeable reader can reconstruct the decision.
4. Enforcement - Discussion and enforcement action must be consistent with significance determination.



Cross-Cutting Areas

Findings with a CCA must meet the following:

- Cross-cutting aspect was the most significant causal factor of the performance deficiency
- The finding is evaluated as more than minor (note: cross-cutting aspect of the finding shall not be used to determine whether the finding is more than minor)
- The finding must not be Licensee-Identified (i.e., the finding must be NRC-Identified or Self-Revealing)



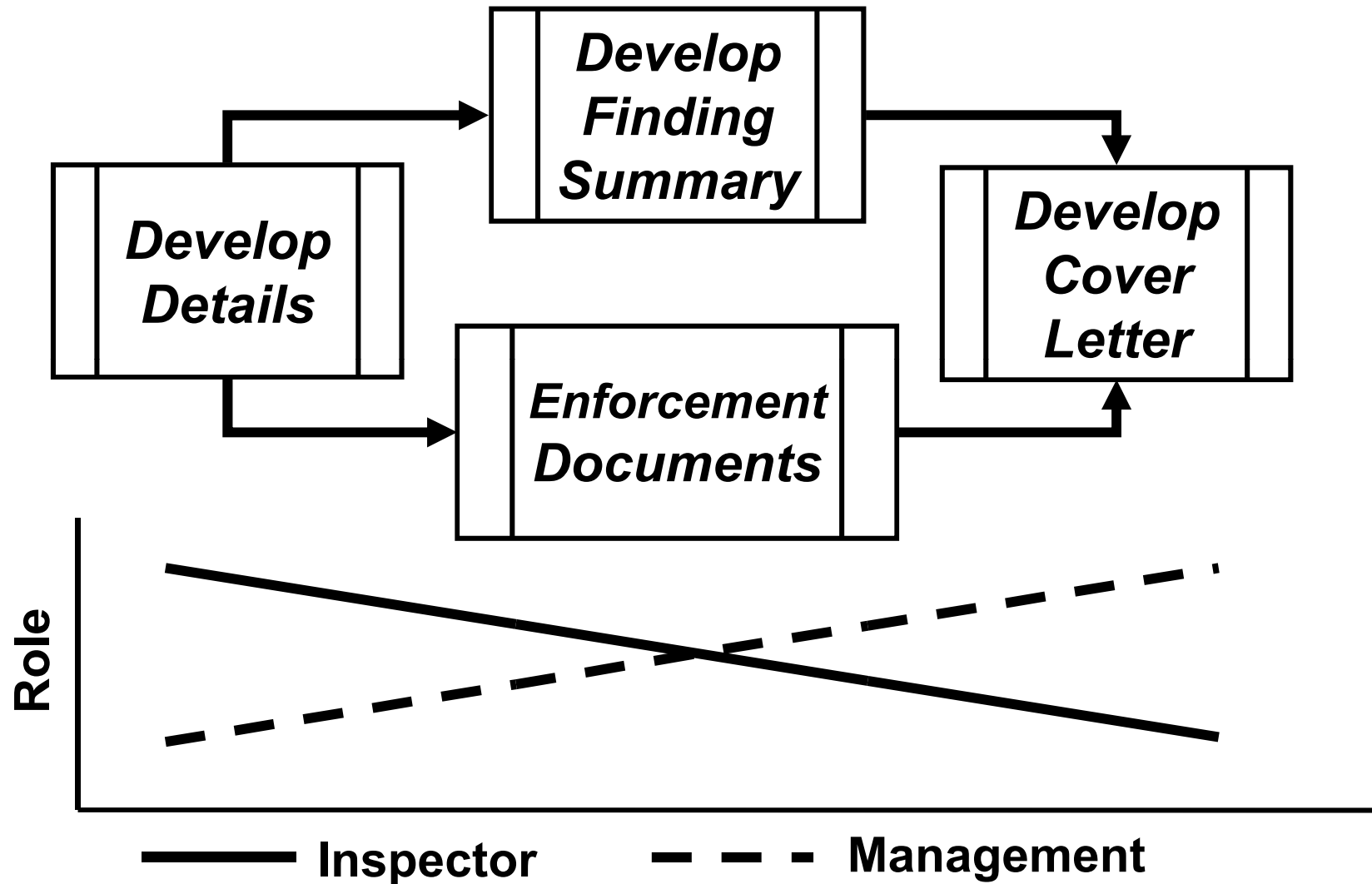
Cross-Cutting Areas

Findings with a CCA must meet the following (cont.):

- The cross-cutting aspect of the inspection finding is reflective of current licensee performance
- Cause of the finding is related to one of the three cross-cutting areas (Problem Identification and Resolution, Human Performance, or Safety-Conscious Work Environment)

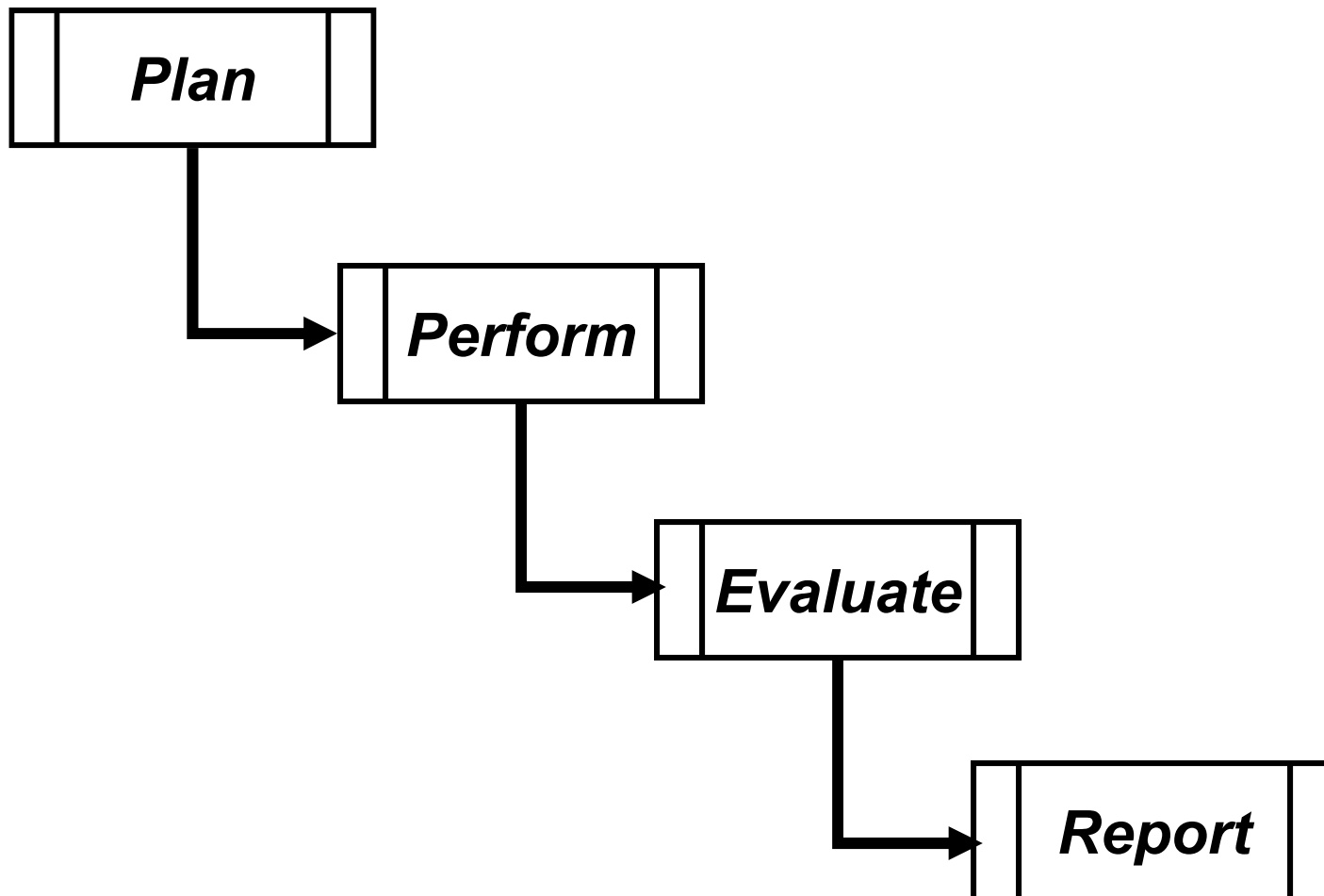


Report Flow





Inspection Process Summary





Open Collaborative Work Environment

- It is an environment that encompasses the entire staff, where administrative and corporate support personnel, as well as members of the technical and legal staff, work together for mutual benefit and to achieve a common goal.
- It is an environment that encourages collaborative problem solving and decision-making.
- It is an environment that values diverse views, alternative approaches, critical thinking, unbiased evaluations, and honest feedback on how decisions are made.
- It is an environment that encourages trust, respect, and open communication to foster and promote a positive work environment.
- It is an environment where employees are comfortable speaking up and sharing concerns and differing views without fear of negative consequences.

Source: <http://www.internal.nrc.gov/OE/ocwe/index.html>



Review - Learning Objectives

- Describe the steps in planning an inspection and the need for such.
- Construct a simple plan for a baseline inspection under simulated conditions.
- Describe the inspector's activities involved with actually performing an inspection in the field.
- Describe the evaluation process including the input requirements and output expectations.
- Perform an evaluation of actual inspection results and characterize findings.
- Describe the inspector's responsibilities in reporting inspection results.