ATTACHMENT 71111.DS

INSPECTABLE AREA: Plant Design - Pilot

CORNERSTONES: Initiating Events (10%)
Mitigating Systems (80%)
Barrier Integrity (10%)

INSPECTION BASES: This procedure provides guidance for the inspection of three plant design related areas: 1) safety system design and performance capability, 2) permanent plant modifications, and 3) evaluations of changes, tests and experiments.

Inspection of safety system design and performance verifies the adequacy of initial design and subsequent modifications to safety systems and provides monitoring of the capability of the selected system to perform its design basis functions. As plants age, their design bases may be lost and important design features may be altered or disabled during a modification resulting in adverse affects on the structures, systems and components availability, reliability or functionality.

Modifications to risk-significant structures, systems, and components (SSCs) can adversely affect their availability, reliability, or functional capability. Modifications to one system may also affect the design bases and functioning of interfacing systems. Similar modifications to several systems could introduce potential for common cause failures that affect plant risk. Modifications performed during increased risk configurations could place the plant in an unsafe condition.

This inspection also monitors the effectiveness of the licensee's implementation of changes to facility structures, systems, and components (SSCs), risk significant normal and emergency operating procedures, test programs, and the updated final safety analysis report (UFSAR) in accordance with the requirements of 10 CFR 50.59. This inspection provides assurance that required license amendments have been obtained.

This inspectable area verifies aspects of the Initiating Events, Mitigating Systems and Barrier Integrity cornerstones for which there are no indicators to measure performance.

LEVEL OF EFFORT: Biennially review the following:

1. One or two risk-significant systems or select a dominant accident sequence and inspect systems and components important to that sequence (Enclosure 1),
2. Five to ten permanent plant modifications (Enclosure 2),
3. Five to seven 10 CFR 50.59 evaluations. Also review approximately 10 to 15 changes, tests, or experiments that were screened out by the licensee (Enclosure 3).

71111.DS-01 INSPECTION OBJECTIVES, REQUIREMENTS, AND GUIDANCE

The inspection objectives, requirements and guidance for the safety system design and performance capability, permanent plant modifications and 10 CFR 50.59 safety evaluations are included in Enclosures 1, 2 and 3 respectively.

71111.DS-02 RESOURCE ESTIMATE

The inspection procedure is estimated to require an average of 480 hours regardless of the number of units at the site with approximately 80% applied to the performance of Enclosure 1, 15 % to Enclosure 2 and 5% to Enclosure 3. This estimate reflects efficiencies gained by the inherent overlap of the three inspection areas. For example, a system design and performance capability inspection includes the review of the types of changes included in the permanent plant modification inspection (design changes, calculations, setpoint changes, etc.). Similarly, 10 CFR 50.59 safety evaluations and screenings are often included in the review of engineering products inspected during the safety system design and performance capability and permanent plant modifications inspections.

This inspection may be accomplished by an integrated team performing Enclosures 1, 2 and 3 during a single inspection effort or by the performance of two or more inspections which divide the performance of Enclosures 1, 2 and 3 as preferred by the individual regional office. Risk significant plant modifications being performed on-line may be reviewed as they occur and can be credited towards the biennial level of effort.

The inspection team for the performance of Enclosure 1 should be multi-disciplinary with expertise relevant to the system(s) being reviewed. Preferably, an inspection team would include individuals with design experience in mechanical engineering, electrical engineering, and instrumentation and controls. If the system(s) selected for review require significant operator actions, consideration should also to given to including an individual with an operations background.

71111.DS-03 COMPLETION STATUS

For Enclosure 1, inspection of the minimum sample size will constitute completion of this procedure in the RPS. That minimum sample size consists of one or two safety system reviews or systems and components associated with a dominant accident sequence, regardless of the number of units at the site. During the pilot, samples for Enclosure 1 will be recorded under 71111.21 in RPS.

For Enclosure 2, inspection of the minimum sample size will constitute completion of this procedure in the RPS. That minimum sample size will consist of the review of five permanent plant modifications on a biennial basis to assess those that impact risk significant SSCs, mitigating systems, and risk significant barriers. During the pilot, samples for Enclosure 2 will be recorded under 71111.17B in RPS.

For Enclosure 3, inspection of the minimum sample size will constitute completion of this procedure in the RPS. That minimum sample size consists of five licensee safety evaluations and ten changes, test, or experiments screened out by the licensee. During the pilot, samples for Enclosure 3 will be recorded under 71111.02 in RPS.

71111.DS-04 REFERENCES

Inspection Procedure 71152, “Identification and Resolution of Problems”

NRC Inspection Manual Part 9900, “10 CFR 50.59 Changes to Facility, Procedures, and Tests(Experiments).”

10 CFR 50.59, “Changes, tests, and experiments”

NRC Regulatory Guide 1.187, “Guidance for Implementation of 10 CFR 50.59, Changes, Test, and Experiments,” Rev. Nov. 2000.

NEI 96-07, Revision 1 (Nov. 2000), Guidance for 10 CFR 50.59 Implementation.

END

Enclosures:
1. Safety System Design and Performance Capability
2. Permanent Plant Modifications
3. 10 CFR 50.59 Safety Evaluations

Enclosure 1

SAFETY SYSTEM DESIGN AND PERFORMANCE CAPABILITY

01 INSPECTION OBJECTIVE

To verify that design bases have been correctly implemented for the selected risk-significant system(s) to ensure that the system(s) can be relied upon to meet functional requirements.

02 INSPECTION REQUIREMENTS

02.01 Inspection Preparation

a. System or Dominant Accident Sequence Selection. Select one or two risk-significant systems used for mitigating an accident or maintaining barrier integrity or select a dominant accident sequence and review systems and components associated with that sequence.

b. Component Selection. Select a sample of at least two significant components for in-depth inspection.

c. Obtain Information. Obtain necessary information for determining design and licensing basis functional requirements for the selected system(s).

02.02 Inspection Activities

a. Review System Needs. Select a sample of inspection attributes for review and verify that system needs are met. Selection of inspection attributes should focus on those attributes that are not fully demonstrated by testing, have not received recent in-depth NRC review, or are critical for the system function. The table below, “System Needs,” is a listing of attributes that are needed for a system to perform its required function. During inspection preparation, identify which attributes are to be inspected. Perform the inspection activities associated with the selected attributes.

System Needs	
Attributes	**Inspection Activity**
Process Medium • water • air • electrical signal	Verify that process medium will be available and unimpeded during accident/event conditions. • Example: For an auxiliary feedwater system, verify that the alternate water source will be available under accident conditions.
Energy Source • electricity • steam • fuel + air • air	Verify energy sources, including those used for control functions, will be available and adequate during accident/event conditions • Example: For a diesel driven auxiliary feedwater pump, verify that diesel fuel is sufficient for the duration of the accident. • Example: For an air-operated pressurizer PORV, verify that either sufficient reservoir air will exist or instrument air will be available to support feed and bleed operation. • Example: For a standby DC battery, verify adequacy of battery capacity.
Controls • initiation actions • control actions • shutdown actions	Verify control system will be functional and provide desired control during accident/event conditions. • Example: For refueling water storage tank level instrumentation providing signal for suction swap-over to containment sump, verify that the setpoint established to ensure sufficient water inventory and prevent loss of required net positive suction head is acceptable.

System Needs	
Attributes	**Inspection Activity**
Operator Actions • initiation • monitoring • control • shutdown	Verify operating procedures (normal, abnormal, or emergency) are consistent with operator actions for accident/event conditions. • Example: If accident analyses assume containment fan coolers are running in slow speed, verify that procedures include checking of this requirement. • Example: If accident analyses assume that containment spray will be manually initiated within a certain time, verify that procedures ensure manual initiation within assumed time and that testing performed to validate the procedures was consistent with design basis assumptions. Verify instrumentation and alarms are available to operators for making necessary decisions. • Example: For swap-over from injection to recirculation, verify that alarms and level instrumentation provide operators with sufficient information to perform the task.
Heat Removal • cooling water • ventilation	Verify that heat will be adequately removed from system • Example: For an emergency diesel generator, verify heat removal through service water will be sufficient for extended operation.

b. Review System Condition and Capability. Verify that the system condition and tested capability is consistent with the design bases and is appropriate. The table below, "System Condition and Capability," is a listing of applicable attributes that could be inspected. Perform the inspection activities associated with the selected attributes.

System Condition and Capability	
Attributes	**Inspection Activity**
Installed Configuration • elevations • flowpath components	Verify, by walkdown or other means, that system installed configuration will support system function under accident/event conditions • Example: Verify level or pressure instrumentation installation is consistent with instrument setpoint calculations. Verify that component configurations have been maintained to be consistent with design assumptions.
Operation	Verify that operation and system alignments are consistent with design and licensing basis assumptions • Example: For a containment spray system, verify emergency operating procedure changes have not impacted design assumptions and requirements. • Example: For a service water system, verify flow balancing will ensure adequate heat transfer to support accident mitigation.
Design • calculations • procedures	Verify that design bases and design assumptions have been appropriately translated into design calculations and procedures.

System Condition and Capability	
Attributes	**Inspection Activity**
Testing • flowrate • pressure • temperature • voltage • current	Verify that acceptance criteria for tested parameters are supported by calculations or other engineering documents to ensure that design and licensing bases are met. • Example: Verify that flowrate acceptance criteria is correlated to the flowrate required under accident conditions with associated head losses, taking setpoint tolerances and instrument inaccuracies into account. Verify that individual tests and/or analyses validate integrated system operation under accident/event conditions. • Example: Verify that EDG sequencer testing properly simulates accident conditions and the equipment response is in accordance with design requirements.

c. Inspect Selected Components. From the table below, select and inspect attributes which are significant for the selected components.

Attributes	Component Inspection Activity
Component Degradation	Verify that potential degradation is monitored or prevented. • Example: For ice condensers, verify that inspection activities ensure air channels have been maintained consistent with design assumptions. Verify that component replacement is consistent with inservice/equipment qualification life. Verify that the numbers of cycles are appropriately tracked for operating cycle sensitive components.

Attributes	Component Inspection Activity
Equipment/ Environmental Qualification • Temperature • Humidity • Radiation • Pressure • Voltage • Vibration	Verify that equipment qualification is suitable for the environment expected under all conditions. • Example: Verify equipment is qualified for room temperatures under accident conditions.
Equipment Protection • fire • flood • missile • high energy line break • HVAC • freezing	Verify equipment is adequately protected. • Example: Verify freeze protection adequate for CST level instrumentation. • Example: Verify that conditions and modifications identified by the licensee's high energy line break analysis have been implemented.
Component Inputs/Outputs	Verify that component inputs and outputs are suitable for application and will be acceptable under accident/event conditions. • Example: Verify that valve fails in the safe configuration. • Example: Verify that required inputs to components, such as coolant flow, electrical voltage, and control air necessary for proper component operation are provided.
Operating Experience	Verify that applicable insights from operating experience have been applied to the selected components. • Example: Verify that component functioned appropriately when challenged during transients.

02.03 Identification and Resolution of Problems. Verify that the licensee is identifying design issues at an appropriate threshold and entering them in the corrective action program. As it relates to design issues, select a sample of problems in the selected system(s) and other risk-significant systems documented by the licensee, and verify effectiveness of corrective actions. See Inspection Procedure 71152, "Identification and Resolution of Problems," for additional guidance.

03 INSPECTION GUIDANCE

03.01 General Guidance on system, and Component Selection

a. System or Dominant Accident Sequence Selection. Consider the following guidance for system selection. Consult the regional SRA and the SRI for plant specific guidance. System selection should focus on:

1. Systems or dominant sequence with high probabilistic risk analysis (PRA) rankings.

2. Systems with design attributes which are not fully demonstrated through testing.

3. Systems which have had significant modifications, changes to design bases, and operating procedure changes.

4. Systems which have not received recent NRC review.

5. Systems which have multiple maintenance rule functions or which support multiple systems.

6. If more than one system is selected, the systems should complement each other(e.g., for a PWR, AFW and pressurizer PORVs; for a BWR, HPCI and ADS).

The following table provides additional guidance and examples.

Cornerstone	Inspection Objective	Risk Priority	Examples
Mitigating Systems Barrier Integrity	Verify system design bases have been maintained. Verify system availability, reliability, and functional capability has been maintained. Verify that safety margins have been maintained. Verify that defense-in-depth philosophy has been maintained.	Design and functional capability of components that are not validated by in-plant testing Emphasis on changes to design bases and normal and emergency procedures Risk significant design features and assumptions not reviewed previously	Residual Heat Removal Auxiliary Feedwater RCIC CCW Service Water EDGs DC Power Containment Isolation RCS/RHR Boundary

b. Component Selection. Component selection should focus on the following:

1. Components whose failure will result in loss of system or train function.

2. Components which support multiple systems or trains.

3. Components with risk significant design features which are not validated by testing.

4. Passive as well as active components.

5. Components which have safety/non-safety related interfaces.

c. Sources of Information. The following table shows the suggested sources of information necessary to perform this inspection.

System Information	Suggested Sources
Design Bases	Updated Final Safety Analysis Report (UFSAR) Design Basis Documentation System Descriptions Design Calculations Design Analyses Piping & Instrumentation Drawings Significant Design Drawings Significant Surveillance Procedures Pre-operational Test Documents Vendor Manuals
Licensing Bases	NRC Regulations Plant Technical Specifications UFSAR NRC Safety Evaluation Reports
Applicable Accidents/Events	UFSAR Individual Plant Examination PRA analyses Emergency Operating Procedures (EOPs)
System Changes	System Modification Packages (including post modification test documents) 10 CFR 50.59 Safety Evaluations Temporary Modifications Work Requests Setpoint Changes EOP Changes
Industry Experience	Licensee Event Reports Bulletins Information Notices

Based on the information obtained, inspectors should be able to identify:

1. System flowpaths
2. Safety feature actuation signals
3. Applicable accident scenarios
4. Failure modes
5. System alignment during accident mitigation
6. System interfaces and interactions
7. Safety interlocks

8. Functional requirements for active components during abnormal/ accident conditions
9. Operator actions required to support system functions
10. Modifications made to the system that could have potentially changed the licensing and/or design bases

03.02 General Design Inspection Guidance

a. Walkdowns. During the walkdown of the selected system(s), inspectors should consider the following questions:

1. Is the installed system consistent with the piping and instrument diagram?

2. Will equipment and instrumentation elevations support the design function?

3. Has adequate sloping of piping and instrument tubing been provided?

4. Are required equipment protection barriers (such as walls) and systems (such as freeze protection) in place and intact?

5. Does the location of the equipment make it susceptible to flooding, fire, high energy line breaks, or other environmental concerns?

6. Has adequate physical separation/electrical isolation been provided?

7. Are there any non-seismic structures, systems, and components (SSCs) surrounding the system which require evaluation for impact upon the system?

8. Does the location of equipment facilitate manual operator action, if required?

9. Are baseplates, hangers, and struts installed properly?

10. Are their indications of degradations of SSCs?

b. Design Review. The purpose of the design inspection is to verify that the system(s) will function as required. In the process of reviewing the design, inspectors should verify the appropriateness of design assumptions, boundary conditions, and models. Independent calculations by the inspectors may be required to verify appropriateness of the licensee's analysis methods. The interfaces between safety related and non-safety related systems should also be reviewed.

In reviewing the functional adequacy of the selected system(s), the inspectors should determine whether the design basis is met by the installed and tested

configuration. The inspectors should understand not only the original purpose of the design but the manner and conditions under which the system will actually be required to function during transients and accidents. For example, if UFSAR information was used as inputs for design or procedures, these inputs should be verified to be consistent with the design bases.

During the design review, inspectors should consider the following questions:

Valves

1. Are the permissive interlocks appropriate?

2. Will the valve function at the pressures that will exist during transient/accident conditions?

3. Will the control and indication power supply be adequate for system function?

4. Is the control logic consistent with the system functional requirements?

6. What manual actions are required to back up and/or correct a degraded function?

Pumps

7. Is the pump capable of supplying required flow at required pressures under transient/accident conditions?

8. Is adequate net positive suction head (NPSH) available under all operating conditions?

9 Is the permissive interlock and control logic appropriate for the system function?

10. Is the pump control adequately designed for automatic operation?

11. When manual control is required, do the operating procedures appropriately describe necessary operator actions?

12. What manual actions are required to back up and/or correct a degraded function?

13. Has the motive power required for the pump during transient/accident conditions been correctly estimated and included in the normal and emergency power supplies?

14. Do vendor data and specifications support sustained operations at low flow rates?

15. Is the design and quality of bearing and seal cooling systems acceptable?

Instrumentation

16. Are the required plant parameters used as inputs to the initiation and control system?

17. If operator intervention is required in certain scenarios, have appropriate alarms and indications been provided?

18. Are the range, accuracy, and setpoint of instrumentation adequate?

19. Are the specified surveillance and calibrations of such instrumentation acceptable?

Circuit Breakers and Fuses

20. Is the breaker control logic adequate to fulfill the functional requirements?

21. Is the short circuit rating in accordance with the short circuit duty?

22. Are the breakers and fuses properly rated for the load current capability?

23. Are breakers and fuses properly rated for DC operation?

Cables

24. Are cables rated to handle full load at the environments temperature expected?

25. Are cables properly rated for short circuit capability?

26. Are cables properly rated for voltage requirements for the loads?

Electrical Loads

27. Have electrical loads been analyzed to function properly under the expected lowest and highest voltage conditions?

28. Have loads been analyzed for their inrush and full load currents?

29. Have loads been analyzed for their electrical protection requirements?

As-built System

30. Are service water flow capacities sufficient with the minimum number of pumps available under accident conditions?

31. Have modified equipment components falling under the scope of 10 CFR 50.49 been thoroughly evaluated for environmental equipment qualifications considerations such as temperature, radiation, and humidity?

32. Are the modifications to the system consistent with the original design and licensing bases?

Enclosure 2

PERMANENT PLANT MODIFICATIONS

01 INSPECTION OBJECTIVES

01.01 To verify that the design bases, licensing bases, and performance capability of risk significant SSCs have not been degraded through modifications.

01.02 To verify that modifications performed during increased risk-significant configurations do not place the plant in an unsafe condition.

02 INSPECTION REQUIREMENTS

02.01 Selection of Modifications. This procedure is performed as a biennial review with the option to review risk-significant modifications performed on-line as they occur. Select modifications to be reviewed, depending on the type of review to be performed, as outlined in the following table.

For the purpose of this inspection, permanent plant modifications include permanent plant changes, design changes, set point changes, procedure changes, equivalency evaluations, suitability analyses, calculations, and commercial grade dedications.

Review Type	Frequency	Scope and Focus	Applicable Inspection Activities
Biennial Review	Once every two years	Emphasis on modifications which affect SSCs with high probabilistic risk analysis (PRA) rankings Primarily modifications which affect mitigating systems At least one modification which affects barrier integrity	Section 02.02a. Design Review Section 02.02c. Testing Review Section 02.02d. Updating Review Section 02.03 Ident. and Resolution of Problems

Review Type	Frequency	Scope and Focus	Applicable Inspection Activities
On-Line Review	As desired.	Modifications planned to be performed when the plant is either on-line or during increased shutdown risk configuration	Section 02.02a. Design Review Section 02.02b. Implementation Review Section 02.02c. Testing Review

02.02 Inspection

a. Design Review. During inspection preparation, identify which affected parameters listed in the following table are to be inspected. Emphasis should be placed on those parameters not verified by testing. Review the design adequacy of the modification by performing the inspection activities for the selected parameters. A pre-inspection visit by regional specialists for the biennial review should be included, if necessary, during inspection preparation to obtain necessary documentation to perform that review.

Affected Parameter	Inspection Activity
Energy Needs • electricity • steam • fuel + air • air	Verify energy requirements can be supplied by supporting systems when required under accident/event conditions. Verify energy requirements of modified SSCs will not deprive other SSCs of required energy under accident/event conditions.

Affected Parameter	Inspection Activity
Materials/Replacement Components • material compatibility • functional properties • environmental qualification • seismic qualification • classification	Verify materials/replacement components are compatible with physical interfaces. Verify material/replacement component properties serve functional requirements under accident/event conditions. Verify materials/replacement components are environmentally qualified for application. Verify replacement components are seismically qualified for application. Verify Code and safety classification of replacement SSCs is consistent with design bases. Verify replacement schedule consistent with inservice/equipment qualification life. Verify that new SSCs added to the plant have been reviewed for inclusion in the maintenance rule scope.
Timing • Sequence • Response Time • Duration	Verify that any sequence changes are bounded by accident analyses and loading on support systems are acceptable. Verify SSC response time is sufficient to serve accident/event functional requirements assumed by design analyses. Verify modified SSC response time does not cause an unintended interaction with other SSCs. Verify equipment will be able to function for the duration required under accident/event conditions.
Heat Removal	Verify that heat removal requirements can be addressed by support systems under accident/event conditions.

Affected Parameter	Inspection Activity
Control Signals • initiation • shutdown • control	Verify that control signals will be appropriate under accident/event conditions.
Equipment Protection • Fire • Flood • Missile • high energy line break • Freeze	Verify that equipment protection barriers and systems have not been compromised.
Operations	Verify that affected operation procedures and training have been identified and necessary changes are in process. Verify that the plant simulator has been updated as required.
Flowpaths	Verify that revised flowpaths serve functional requirements under accident/event conditions.
Pressure Boundary	Verify pressure boundary integrity is not compromised.
Ventilation Boundary	Verify that changes to ventilation boundaries do not increase risk of spreading contamination. Verify that changes to ventilation boundaries do not adversely affect functionality of ventilation system under accident/event conditions.
Structural	Verify modified SSCs structural integrity acceptable for accident/event conditions. Verify modified SSCs structural effects upon attachment points acceptable. Verify modified SSCs effect on seismic evaluations acceptable.

Affected Parameter	Inspection Activity
Process Medium • Fluid Pressures • Fluid Flowrates • Voltages • Currents	Verify that affected process medium properties will be acceptable for both modified SSCs and unmodified SSCs under accident/event conditions.
Licensing Basis • 10 CFR 50.59	Verify that necessary Technical Specification changes have been identified and NRC approvals, if required, were obtained prior to modification implementation. Verify acceptability of licensee's conclusions for those modifications where evaluations in accordance with 10 CFR 50.59 were not performed.
Failure Modes	Verify those failure modes introduced by the modification are bounded by existing analyses.

b. Implementation Review. Verify that modification preparation, staging, and implementation does not impair the following:

1. In-plant emergency/abnormal operating procedure actions

2. Key safety functions

3. Operator response to loss of key safety functions

(For on-line modification reviews this inspection activity is optional)

c. Testing Review. Verify that post-modification testing will maintain the plant in a safe configuration during testing. Verify that post-modification testing will establish operability by:

1. Verifying that unintended system interactions will not occur.

2. Verifying SSC performance characteristics, which could have been affected by the modification, meet the design bases.

3. Validating the appropriateness of modification design assumptions.

4. Demonstrating that the modification test acceptance criteria have been met.

NOTE: Licensees often use existing procedures, such as surveillance procedures, for post-modification testing. Although performance of existing procedures may have been reviewed by inspectors for other inspectable areas, inspectors still need to verify the appropriateness of using the existing procedures for validating the modification (as opposed to simply confirming continued operability).

d. Updating Review

1. Verify that design and licensing documents have either been updated or are in the process of being updated to reflect the modifications. Examples of design documents which could be affected by modifications are: updated final safety analysis report, drawings, supporting calculations and analyses, plant equipment lists, and vendor manuals.

2. Verify that significant plant procedures, such as normal, abnormal, and emergency operating procedures, testing and surveillance procedures, and licensed operator training manuals are updated to reflect the effects of the modification prior to being used.

3. If the plant modification added or deleted functions that could affect the plant specific SDP worksheets, inform the Regional SRA.

(For on-line modification reviews this inspection activity is optional.)

02.03 Identification and Resolution of Problems. Verify that the licensee is identifying permanent plant modification issues at an appropriate threshold and entering them in the corrective action program. As it relates to permanent plant modifications, select a sample of problems documented by the licensee and verify appropriateness of the corrective actions. See Inspection Procedure 71152, "Identification and Resolution of Problems," for additional guidance.

(For on-line modification this inspection activity is optional.)

03 INSPECTION GUIDANCE

Cornerstone	Inspection Objective	Risk Priority	Examples

Initiating Events	Verify modifications have maintained system availability, reliability, and functional capability.	Modifications that increase the likelihood of initiating events	Modifications to reactor coolant pressure boundary Modifications to switchyard or feedwater controls
Mitigating Systems		Modifications which affect • protection against external events such as fire, weather, and flooding • risk-significant design features and assumptions • functionality of mitigating systems used during risk-significant accident sequences	Modification of reactor building drain system Replacement of a low pressure safety injection system injection valve with a valve of a different design
Barrier Integrity		Modifications which affect fuel cladding, reactor coolant system, or containment	Modification of personnel access hatch seal

Enclosure 3

10CFR 50.59 SAFETY EVALUATIONS

01 INSPECTION OBJECTIVES

01.01 To verify that changes to tests or experiments not described in UFSAR (for example a SSC utilized in a way either outside the design basis or inconsistent with the safety analyses), and changes to the facility or procedures as described in the UFSAR, are reviewed and documented in accordance with 10 CFR 50.59. Verify that safety issues pertinent to the changes are resolved.

01.02 To verify that the licensee has obtained NRC approval prior to implementing those changes that require such approval as stated in 10 CFR 50.59.

02 INSPECTION REQUIREMENTS

02.01 Sample Selection

a. Review the list of evaluations performed by the licensee and select completed evaluations, choosing samples from different cornerstones, and based on risk significance from any of the following:

   1. Tests or experiments not described in UFSAR.
   2. Changes to facility as described in UFSAR.
   3. Changes to procedures as described in UFSAR.

   Include in the selection, evaluations associated with calculations, procedure revisions, modifications, non-routine operating configurations, and departures in methods of analyses.

b. Select samples of changes, tests, or experiments that the licensee determined did not require 10 CFR 50.59 evaluations. Choose samples from different cornerstones based on risk significance.

02.02 Inspection

a. Verify that the licensee has appropriately considered the conditions under which the licensee may make changes to the facility or procedures or conduct tests or experiments without prior NRC approval. Verify that the licensee has appropriately concluded that the change, test or experiment can be accomplished without obtaining a license amendment.

b. Verify that safety issues related to the changes, tests, or experiments have been resolved.

c. For the changes, tests, or experiments that the licensee determined that evaluations were not required, verify that the licensee's conclusions were correct and consistent with 10 CFR 50.59.

02.03 Identification and Resolution of Problems. Verify that the licensee is identifying problems related to 10 CFR 50.59 evaluations at an appropriate threshold and entering them in the corrective action program. For a selected sample of problems associated with 10 CFR 50.59 evaluations, verify that the licensee has appropriately resolved the technical concerns and regulatory requirements. See Inspection Procedure 71152, "Identification and Resolution of Problems," for additional guidance.

03 INSPECTION GUIDANCE

General Guidance

Cornerstone	Inspection Objective	Risk Priority	Example
Initiating Events	Verify whether facility changes or tests require license amendment	Changes or tests or experiments which increase the likelihood of initiating events	Performing a test that cuts off normal water source to the emergency service water pumps Modifications to equipment in the switchyard
Mitigating Systems	Verify whether facility changes or tests require license amendment	Changes or tests or experiments which affect the ability to mitigate an accident	Decreasing the flow rate of an residual heat removal pump to less than that analyzed in the safety analysis report
Barrier Integrity	Verify whether facility changes or tests require license amendment	Changes or tests or experiments which affect barrier integrity	Increasing stroke time of a containment isolation valve to greater than that analyzed in the safety analysis report

Specific Guidance

03.01 No specific guidance

03.02 Inspectors should obtain and review additional information (such as calculations and analyses) if needed to verify the samples selected.

03.03 No specific guidance