

## CEOG SSFA GENERIC ASSESSMENT PLAN

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# CEOG SSFA GENERIC ASSESSMENT PLAN

## 1. Introduction

The CEOG Executive Committee created an engineering resource sharing initiative for the primary purpose of, but not limited to, performing safety system functional assessments (SSFA). These SSFAs will be performed on various safety related systems at CEOG participant PWR plants. These SSFAs will be performed in part by peer engineering personnel from the various CEOG member utilities' PWR design plants. The use of peer engineering personnel will strengthen independence of assessment, promote the use of operating experience specific to Westinghouse-CE design plants and enhance the overall technical knowledge and skills of the assessment team members. The SSFA teams will benefit both technically and economically from peer resources whose knowledge and skills are based on very similar plant design. Westinghouse will work directly with the host utility SSFA manager to provide management assistance during the SSFA. Westinghouse oversight is intended to enforce consistency and rigor across the SSFA program. Westinghouse will be directly involved in the conduct of the SSFAs. Additionally, Westinghouse will support the utility participants at NRC interface meetings. This document revision has been developed to incorporate lessons learned from previous SSFA activities and the inspection focus in the NRC Revised Oversight Process (ROP).

### SSFA Purpose

The purpose of an SSFA is to validate that a risk significant system in a nuclear power plant has been designed and maintained in a manner to ensure reliable operation in normal, abnormal, and/or emergency conditions and can perform its intended safety function. The host utility may use this process to assess the design and operational capability of non-risk significant systems. As plants age, their design bases may be lost and an important design feature may be altered or disabled during a modification. The plant risk assessment model assumes capability of safety systems to perform its intended safety function successfully. The purpose of an SSFA is to verify aspects of the NRC ROP Mitigating Systems and Barrier Integrity cornerstones for which there are no indicators to measure performance.

In a broad sense, the SSFA is conducted on a selective basis to perform an in-depth review of design related activities, testing, operations, maintenance and corrective actions of safety

systems. The SSFA will address regulatory compliance, good practices and peer information.

SSFAs are a proactive approach that will self-identify problems and provide for continual assessment of the overall health of plant equipment, systems and programs and are part of the utility's self-assessment program. The SSFAs will identify system and process related problems. Observations will be documented and addressed in accordance with the host utility's site specific Corrective Actions Program. The SSFA report will document the observations of the assessment. The SSFAs are intended to be performed rigorously and thoroughly while focusing on nuclear safety and plant reliability and availability. SSFAs will reveal potential vulnerabilities within plant systems and programs.

#### Generic Assessment Plan Purpose

The purpose of this Generic Assessment Plan (GAP) is to provide generic guidance for performing SSFAs in order to improve overall performance and self regulation. The GAP recommends specific SSFA content, team composition, sharing of lessons learned and provides general expectations for the SSFA host utility, Westinghouse and peer participants. The GAP will also serve as guidance for the host utility when communicating with peer utility SSFA team members and/or the NRC.

This revision of the GAP reflects additional guidance on the conduct of an SSFA based on the NRC's Revised Oversight Process. The NRC Revised Oversight Process (ROP) identifies seven cornerstones of safety. The NRC evaluates plant performance by evaluating two distinct inputs: inspection observations resulting from the NRC's inspection program and performance indicators (PIs) reported by the utility. NRC inspection guidance for Safety System Design and Performance Capability (Attachment 71111.21) provides insight on the criteria and methodology that will be used during NRC inspections.

The NRC is evaluating the use of Licensee Self Assessments (LSA) as part of the NRC ROP. It is the intent of the CEOP utilities to perform SSFAs that could be recognized by the NRC as supporting the LSA initiative.

## 2. Scope

The primary objective of an SSFA is to assess the operational performance capability of selected safety systems, through a selective review to verify that the selected systems are

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capable of performing their intended safety functions. The SSFA will be performed not only to demonstrate compliance with NRC inspection requirements but also to capture best practices, operational improvements and knowledge sharing between utility peers. The SSFAs will use NRC Inspection Procedure 71111.21 Safety System Design and Performance Capability as a basis for the conduct of the SSFA.

### Overview

NRC IP 71111.21 provides guidance on the selection of systems and components for the SSFA. In general it is recommended that the SSFA should select a risk significant system used for mitigating an accident or maintaining barrier integrity. Selection of 2 or more significant components is recommended for in-depth inspection.

### System Selection

It is recommended that the following guidance be utilized in selection of the system:

1. Systems with high probabilistic risk analysis (PRA) ranking
2. Systems with design attributes that 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 internal or NRC review.
5. Systems that have multiple maintenance rule functions or which support multiple systems.
6. Systems that have industry or plant specific issues, in particular, systems that have frequent unavailability times.

### Component Selection

It is recommended that the following guidance be utilized in selection of the important components:

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 that are not validated by testing.
4. Passive as well as active components.

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5. Components that have safety/non-safety related interfaces.
6. Components that have been recently modified or replaced.

Scope considerations for site specific SSFAs may include, but are not limited to:

- Engineering Design and Configuration Control
- System Operation - procedures, plant specific operating history, and industry operating experience
- System Maintenance - procedures, plant specific operating history, and industry operating experience
- Operational Configuration (i.e.; things maintained or impacted by engineering such as locked valve list, active valve list, containment boundary definition, effects of barriers on hazards analysis, etc.)
- 10CFR50.59 Safety Evaluations
- System Design and Licensing Bases
- UFSAR and Tech Specs
- Surveillance Testing
- Instrument Setpoints and Loop Uncertainties
- Design Margin Management
- Corrective Action
- Licensee Event Reports
- Operability Determinations
- Design Bases analysis
- Translation of design bases into operations procedures
- Abnormal & Emergency operating procedures
- Plant Modifications vs. Compensatory Measures
- Operator work-arounds
- Operating Experience
- Control room deficiencies
- Control Room Observation
- A. O. Activities
- Temporary modifications

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- Material condition
- Plant housekeeping
- Engineering backlog
- Corrective maintenance backlog
- Observation of Corrective Maintenance
- Use of probabilistic risk assessment
- Non-conforming condition disposition
- Previous corrective action effectiveness
- Maintenance Rule functional failures
- Assess Maintenance Work/Rework and Repetitive Work/Rework
- Observation of Surveillance Testing
- Collective System Reliability/Availability

The scope of the site specific SSFA may also create the opportunity to determine program related root cause(s) for any identified performance deficiencies and analyze the implications of these deficiencies on plant programs and processes.

The site specific SSFA plan will consider, whenever feasible, industry operating experience. The site specific SSFA plan may also consider reviewing other selected industry system inspection reports for the purpose of identifying additional areas of assessment and to apply lessons learned, (i.e. NRC IN 98-22 "Deficiencies identified during NRC Design Inspections," other plant INPO/NRC inspection reports). The site specific SSFA plan may consider attributes from other NRC Inspection Manual procedures. Other NRC Inspection Procedures that may be considered are:

IP 71111	"Reactor Safety-Initiating Events, Mitigating Systems, Barrier Integrity"
IP 71111.01	"Adverse Weather Protection"
IP 71111.02	"Evaluation of Changes, Tests, or Experiments"
IP 71111.04	"Equipment Alignment"
IP 71111.05	"Fire Protection"
IP 71111.07	"Heat Sink Performance"
IP 71111.08	"In-service Inspection Activities"
IP 71111.11	"Licensed Operator Re-qualification Program"
IP 71111.12	"Maintenance Rule Implementation"

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IP 71111.13	"Maintenance Risk Assessments and Emergent Work Evolutions"
IP 71111.14	"Personnel Performance During Non-routine Plant Evolutions"
IP 71111.15	"Operability Evaluations"
IP 71111.16	"Operator Workarounds"
IP 71111.17	"Permanent Plant Modifications"
IP 71111.19	"Post Maintenance Testing"
IP 71111.20	"Refueling and Outage Activities"
IP 71111.22	"Surveillance Testing"
IP 71111.23	"Temporary Plant Modifications"
IP 71152	"Corrective Action Programs"

The host utility will determine safety system selection. Each plant specific SSFA plan will be generated to the host plant specific program requirements.

The assessment is conducted as a selective review of the system. By the nature of a selective review, the utility will develop an assessment plan to provide guidance to the assessment team. IP 71111.21 shall be reviewed and used as a basis for the assessment plan.

Issues with the potential for generic implications will be properly documented but not necessarily evaluated as part of the SSFA. It will be the host utility's responsibility to determine the appropriateness and means to notify the industry, specifically other CE plant design plant owners, of potential generic problem implications.

The Resource Sharing Subcommittee participant utilities will determine the periodicity of these SSFAs.

### 3. Conduct of Assessment

The site specific SSFA will be conducted utilizing best practice or proven techniques, such as those outlined in NRC Inspection Procedure 71111.21, Inspection Manual Procedures 93801 and 93809 and those used by INPO. It is recommended that the team utilize the following "good practices":

- Team members should read and familiarize themselves with the scope of the assessment prior to the start of the assessment.

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- Team members should be familiarized with techniques for daily debriefs and how to write field observations as addressed in INPO training material.
- Any team observation should be treated as preliminary until sufficient documentation and facts are obtained to substantiate it. All observations should be thoroughly investigated and challenged by the team prior to classification as a Recommendation, Adverse Condition or Strength.
- Review the NRC documents "Diagnostic Evaluation Team Manager's Handbook" and "Guidelines for Diagnostic Evaluations" for assessment techniques and audit areas.
- Daily team debriefs are encouraged to enable the team to challenge observations and supporting information, share information and look for commonalties in potential strengths and weaknesses. Review specific items on debriefings in Lessons Learned Summary.
- Plant management shall be involved in the routine debriefings
- All personnel interviews should be documented and treated as confidential and sensitive information. Every effort should be made to distinguish facts from speculation and/or opinion.
- The SSFA shall always be conducted utilizing site specific program requirements.
- Field walk-downs of the associated systems will strengthen the assessment. Thoroughly review the configuration documentation prior to the walk-downs to gain facts and pre-identify issues.
- Prior to initiation of the SSFA, the team leader in consultation with the team members should ensure that all functional areas of the plan (Engineering Design and Configuration Control, Operations, Maintenance, Surveillance and Testing, and Quality Assurance and Corrective Actions) have been adequately and appropriately assigned to each of the team members.

### **SSFA Prerequisites**

1. Safety systems are selected



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2. Corrective action documentation search is completed
3. Team composition is finalized
4. Identify team work assignments
5. Match team skills to SSFA work scope
6. Team members have received copies of:
  - Site specific SSFA plan
  - Host utility organization charts
  - Drawings and documents as necessary for preparation
  - Collected information on pre-known issues
7. Response Team Key Contacts are identified. Note: Host utility shall establish a SSFA response team. This team provides contacts within the normal plant organization who will respond and/or coordinate SSFA team member interviews, question responses, data gathering, etc. It is recommended that the response team include members from the Design Engineering, Systems Engineering, Maintenance and Operations organizations.
8. Tracking process for information requests and open items is available
9. Relevant information/documentation is identified and available:
  - System descriptions
  - Design bases information/Design Bases Documents, as available
  - UFSAR
  - Technical Specifications
  - SER
  - P&ID's
  - System Modifications
  - Related 10CFR50.59 evaluations
  - LER's
  - System health reports
  - Operating and maintenance history
  - Related maintenance rule data and functional failures
  - Past NRC Inspection Reports
  - Related design calculations and analysis
  - Key Operations and Maintenance Procedures
  - List of open corrective work orders

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- Significant corrective action documents
  - Relevant Operating Experience
  - Appropriate plant program procedures
  - Related IN's and Generic Letters
  - Related Surveillance Tests
  - OEM documentation
10. Dedicate adequate work space for the duration of the SSFA. Note: Work area for SSFA should allow for the team to engage in private and open dialog when attempting to validate observations.
  11. Clerical/Technician support is available and confirmed for the duration of the SSFA. Utility personnel should be made available to perform database queries and searches.
  12. Support personnel, such as subject matter experts, records management staff should be made available as-needed for timely support to the assessment.
  13. Establish protocols for SSFA related briefings and communications.
  14. Obtain adequate computer hardware and software to support SSFA team productivity. Access/passwords should be prearranged to ensure access to office productivity software.

### Team Composition

The conduct of the SSFA requires a significant commitment of resources to ensure a quality initiative and viable results. The size of the typical SSFA team is anticipated to be an average of seven people including a dedicated team leader. Additional specialized expertise maybe added on a part time basis as dictated by the scope of the SSFA.

Selected team members should possess the skills, knowledge, and/or expertise, as appropriate, to provide a fully functional team and be able to adequately address the planned scope of the site specific SSFA. Team members shall be indoctrinated in inspection techniques. Team members should also have self-assessment experience. If not, access to training material on techniques for self assessment should be provided by the member's utility.

Skills, knowledge and expertise for consideration are:

- Assessment leadership

*3 persons 1 of which  
is from outside company.*

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- Mechanical engineering
- Electrical engineering
- Civil/Structural engineering
- Licensing
- Safety analysis
- Operations
- Maintenance
- System engineering
- Surveillance and testing
- I&C/setpoint & loop uncertainty engineering
- Equipment qualification
- Fire protection
- Reactor engineering
- QA audit experience
- Radiological analysis
- Component level knowledge
- Configuration management knowledge

Ideally individual team members with multiple areas of expertise should be utilized to reduce the total number of resources required to perform the SSFA and to enhance the team's overall skill and knowledge. Peer team member selection is intended to enhance or augment the available host SSFA team membership. It is a benefit to the SSFA team and the quality of the SSFA results if some team members have sufficient CE operating plant and industry operating experience.

Selection of the team leader is one that will set the expectation of the assessment. The leader needs to demonstrate and promote ownership, tenacity and thoroughness for investigating issues, to establish if there is a real issue or not. The leader needs to be an authority as opposed to one that is simply helpful to the team.

### Recommended Sequence of Events

<u>Timing</u>	<u>Event</u>
4 months prior	<ul style="list-style-type: none"><li>▪ Preliminary scope identified.</li><li>▪ Host utility/Westinghouse identifies team skill/knowledge</li></ul>

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<u>Timing</u>	<u>Event</u>
	composition and makes request for peer member support.
2 months prior	<ul style="list-style-type: none"><li>▪ Host utility/Westinghouse identifies host &amp; peer team members (team is finalized).</li><li>▪ Final draft of site specific SSFA plan is available for review.</li></ul>
1 month prior	<ul style="list-style-type: none"><li>▪ Peer team members should provide host with data to obtain site access.</li><li>▪ Gather and make available initial SSFA documentation packages.</li><li>▪ Secure SSFA team location at host site.</li><li>▪ Host and peer team member's review training material on self-assessment techniques.</li><li>▪ Host utility/ Westinghouse should contact peer team members for final confirmation.</li></ul>
1 week prior	<ul style="list-style-type: none"><li>▪ Westinghouse travels to site to assist utility lead in final preparations for SSFA.</li><li>▪ Team conference call to discuss SSFA plan, schedule and preparation expectations.</li><li>▪ Team members review documents and prepare for SSFA.</li><li>▪ Notify NRC site specific residents, as appropriate.</li></ul>
SSFA - Week 1	<ul style="list-style-type: none"><li>▪ SSFA Entrance Meeting.</li><li>▪ All SSFA team members on-site.</li><li>▪ Daily team debriefs to review observations and supporting facts.</li><li>▪ Provide regular debriefs to key station personnel.</li><li>▪ Corrective action documents as generated as necessary.</li><li>▪ Develop and substantiate potential observations.</li><li>▪ Conduct informal exit meeting.</li><li>▪ Open item closure/responses completed.</li><li>▪ Conduct formal exit meeting.</li></ul>
Post SSFA - Week 2	<ul style="list-style-type: none"><li>▪ Westinghouse to develop draft SSFA Report</li><li>▪ Finalize observations and categorize into strengths and areas needing improvement.</li><li>▪ Finalize report.</li><li>▪ Distribute final report to the host and participating CEOG members.</li><li>▪ Set up lessons learned meeting with CEOG RSSC and appropriate SSFA team members.</li></ul>

### Reports

The site specific SSFA self assessment plans and the subsequent final self assessment report shall be distributed to all CEOG plants members supporting the CEOG SSFA resource sharing effort whether or not they actively participated in the associated specific

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### SSFA.

The final SSFA report will be developed using the generic format (Attachment B). The report shall document the conduct and observations of the assessment. The report shall document the basis and selection process associated with the specific SSC (system, structure or component) that was the subject of the assessment.

The final report will be generated as a CEOG document. Final reports may contain host plant sensitive information. Therefore, all reports will be marked as a Westinghouse Proprietary Class 2 to control external distribution.

#### **4. Lessons Learned**

It is an important part of resource sharing and the success of the SSFAs conducted that lessons learned be developed and shared with all CEOG participant plants. It is essential to always remain self critical of the process and to provide feedback on both things that worked well and areas that need improvement. Continuous improvement will lead to an optimum process and an efficient use of resources yielding high quality products.

It is intended that the CEOG RSSC and specified SSFA participants to gather and record lessons learned from the SSFA. Host SSFA leaders or the corresponding CEOG RSSC members should present feedback from their recent assessment at scheduled RSSC meetings or conference calls. Lessons Learned will be compiled in one document for use by the RSSC.

#### **5. Expectations**

##### **Host Plant**

- Provides SSFA team leader.
- Provide early notification to all team members of SSFA work scopes and deliverables
- Provides administrative and computer support.
- Responsible for NRC interface and communications.
- Owns SSFA observations and corrective actions.

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- Establishes SSFA information requests and open item tracking.
- Determines how corrective actions will be implemented.
- Provides timely notification to SSFA schedule change to Peers.
- Responsible to setup and coordinate on-site interviews during SSFA.
- Financially responsible for all contract support to SSFA.
- Facilitate notification to CEOG members when organizing SSFA / forming SSFA team.

### Peer Participation

- Arrive the evening before the assessment and leave after the exit meeting.
- Ideally commits to audit for 2 weeks but not less than 1 week.
- Provide SSFA Leader with all field notes and Observations before leaving site at end of SSFA.
- Ideally complete final report input prior to leaving site at end of SSFA.
- Return all proprietary and sensitive documentation to SSFA leader.
- Prepares for SSFA prior to arrival on site.
- Supplies host access/escort information as necessary to support SSFA.
- Responsible for all travel and subsistence costs associated with their support to the host SSFA.

### Westinghouse

- Provides management and coordination of the SSFA resource sharing program.
- Provides SSFA Project Manager for the SSFA activities.
- Provides assistance to utility in the planning phase of the SSFA.
- Provides project management assistance to the Host Plant leader in the conduct of the SSFA.
- Provides the draft final report for review by the Host Plant leader.
  - Develops and distributes lessons learned with host utility.
  - Distributes final SSFA reports.
  - Sets up lessons learned meeting with CEOG Task Force and appropriate SSFA team members.

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- Facilitate notification to CEOG members when organizing SSFA / forming SSFA team.
- Maintains the "Generic Assessment Plan" (GAP).
- Maintains "SSFA Schedule and Participation Matrix".
- Participates as a peer participant in the SSFA, when contracted by host.
- Distributes and collects the SSFA Peer Reviewer Feedback forms.
- Distribution of SSFA audit reports, as requested by host.
- Facilitates development and presentation of Lessons Learned presentations at the RSSC meeting or by conference call.
- Assists with development and distribution of Lessons Learned, as requested by host.
- Develops and maintains the listing: "SSFA Lessons Learned Summary."

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**ATTACHMENTS**

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**Attachment A: Team Observation Format**

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**Team Observations:**

Observation No: \_\_\_\_\_

TEAM MEMBER: \_\_\_\_\_

Date of Observation: \_\_\_\_\_

Description: (Provide a 2 sentence description of Observation.)

Check One:

Recommendation     Adverse Condition     Strength

**Area of inspection** (Refer to Inspection Plan Section 4):

**Documents reviewed** (Include revision and/or date issued):

**Personnel contacted** (Name, position and date of meeting):

**Issue / Strength:** (Provide sufficient detail to allow an independent party to reach your conclusion. Provide criteria, procedure or practice on which the observation was based )

**Team Member's Conclusion:**

Condition Report issued (Y/N): \_\_\_\_\_ CR Number: \_\_\_\_\_

**[System]  
Safety System Functional Assessment  
[Utility/Plant]  
CEOG Task 2031**

**[Date]**

Author: \_\_\_\_\_  
                    **[Name]**  
                    Assessment Lead

Approved: \_\_\_\_\_  
                    **[Name Host Leader]**  
                    **[Plant]** Assessment Lead

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10.0 DOCUMENTS REFERENCED ..... X

  

APPENDIX A - DETAILED OBSERVATIONS ..... A-1

APPENDIX B – ASSESSOR SUMMARIES ..... B-1

*[Other attachments as necessary by choice of Utility.]*

*Note that the format and content of this sample Report is provided as guidance for developing the plant specific assessment report. Existing utility guidance may exist that also provides this information and can, in instances, take precedent over the following suggested format and content. However, it is highly suggested that this example report be followed as much as possible since the CEOG Resource Sharing Subcommittee intent is to maintain consistency in these assessments.*

Assessment Number [xxx]

# **Safety System Functional Assessment** **[System Name]**

*Note: Italicized text is to be replaced as appropriate.*

For

*[Utility Name]*  
*[Plant Name]*

*[Date]*

\_\_\_\_\_  
Team Leader

\_\_\_\_\_  
Responsible Functional Manager

\_\_\_\_\_  
*[Other Approval as necessary by Utility requirement]*

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Attachment 1 Documentation of Observations.. ..... x

[Other attachments as necessary by choice of Utility ]

*Note that the format and content of this sample Plan is provided as guidance for developing the plant specific assessment plan. Existing utility guidance may exist that also provides this information and can, in instances, take precedent over the following suggested format and content. However, it is highly suggested that this example Plan be followed as much as possible since the intent is to maintain consistency in these assessments.*

**1. SYSTEM TO BE ASSESSED**

*[Describe the system to be assessed. Provide sufficient detail to define the physical boundaries.]*

**2. ASSESSMENT SCOPE**

*[Edit this section as appropriate.]*

The scope of the Safety System Functional Assessment (SSFA) is to assess *[the plant's]* engineering effectiveness through an in-depth review of calculations, analyses and other engineering documents used to support system performance during normal and accident or abnormal conditions. The assessment will determine the quality of safety evaluations performed in support of engineering modifications on the system.

The assessment will follow the CEOG Resource Sharing Subcommittee Generic Assessment Plan (Reference 1) and *[Utility specific procedure for engineering assessments]* (Reference 2) and *[cover recent cycles]* of plant operation.

**3. ASSESSMENT TEAM MEMBERS**

Team Leader:	<i>[Utility Leader Name]</i>	<i>[Host Utility]</i>
Co-Leader:	<i>[Name]</i>	Westinghouse Electric Co.
Sponsoring Manager	<i>[Name]</i>	<i>[Host Utility]</i>

Assessors:

*[List the utility team members, the visiting utility peers, and hired consultants]*

<i>[Name]</i>	<i>[Utility]</i>	<i>[List specialty or title]</i>
<i>[Name]</i>	<i>[Utility]</i>	<i>[List specialty or title]</i>
<i>[Name]</i>	<i>[Utility]</i>	<i>[List specialty or title]</i>
<i>[Name]</i>	<i>[Utility]</i>	<i>[List specialty or title]</i>
<i>[Name]</i>	<i>[Utility]</i>	<i>[List specialty or title]</i>
<i>[Name]</i>	<i>[Utility]</i>	<i>[List specialty or title]</i>

**4. CONDUCT OF THE ASSESSMENT**

*[Edit this section and subsections as appropriate.]*

The assessment will be conducted in accordance with the CEOG Resource Sharing Subcommittee Generic Assessment Plan (Reference 1) and *[Utility specific procedure for engineering assessments]* (Reference 2). Prior to initiating the assessment, the Team Leader will review the applicable Lessons Learned from CEOG Reference 3 with the assessment team members.

*[The areas identified in this section are intended to be inclusive of those topics available for inspection. Based on the time allowed for the assessment a sampling of these areas may be considered to be acceptable as determined by the team.]*

**4.1 DESIGN AND LICENSING BASIS**

Review the design, licensing basis (USAR & Technical Specifications) and other design documents, such as calculations and analyses (DBD & System Training Manual) for the [Subject System] and determine the functional requirements for the system and each active component during accident or abnormal conditions.

- a. The functional requirements of the system are described in the USAR
- b. The USAR reflects NRC licensing commitments and SERs.
- c. Engineering Analysis and Calculations exist and support the USAR functions and safety limits are not exceeded
- d. Assumptions in the design basis, calculations and USAR are adequate and justified.
- e. The functional requirements support the conclusions of USAR Chapter [14] Safety Analysis
- f. The USAR and supporting design basis are consistent with the Technical Specifications and Bases.
- g. Other design basis documents are consistent with the USAR and Technical Specifications such as the DBD's and System Training Manuals.

**4.2 PLANT TEST PROCEDURES**

Select significant test procedures and verify that the acceptance criteria specified in the test procedures for system components are adequately supported by design calculation or other engineering documents.

- a. The surveillance tests reflect the requirements of the Technical Specifications.
- b. Calculations and analysis support the surveillance test acceptance criteria.
- c. The acceptance criteria include uncertainty and margin.
- d. Surveillance tests adequately demonstrate the system meets the functional requirements of the system for accident and abnormal conditions.
- e. Surveillance tests have not had a high rate of failure in the past [18] months.
- f. Surveillance testing is performed in proper modes without impacting USAR assumptions and accident mitigation.

**4.3 PLANT OPERATING PROCEDURES**

Determine whether the normal and emergency operation of the system is consistent with the design basis and licensing documents. Determine the need for further review and operational evaluation of discrepancies.

- a. The EOP actions and bases are consistent with the USAR and supporting design basis and technical specifications.
- b. Design/Licensing basis criteria or assumptions have been translated into operating practice through training and/or procedure changes
- c. Are there permissive interlocks involved?
- d. Will valves be repositioned during the course of the event?
- e. What control logic, source of control and indication power is involved?

## **Attachment C: Recommended SSFA Plan**

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- f. What manual actions are required to backup and restore a degraded function?
- g. What flow paths will pumps experience during accident scenarios and do they change?
- h. What is the motive power of pumps, what manual actions to restore degraded functions of pumps are needed and do the vendor data and specifications support these functions and accident flow requirements?
- i. What plant parameters are used as inputs to the initiation and control system. Are the range, accuracy and setpoint of instrumentation adequate?
- j. What indications, alarms, etc. will operators have and the ARP is adequate?

### **4.4 CONTROL OF DESIGN AND LICENSING INFORMATION**

Evaluate the licensee's control and use of design and licensing input information, and the adequacy of design calculations from the perspective of design changes made to the selected safety system. Review a selected sample of modifications.

- a. There is a sufficient set of design documents to demonstrate that design margins have not been reduced.
- b. Assumptions upon which the original design basis was based are adequate.
- c. Review to determine if engineering judgements used in place of calculations are identified and justified.
- d. Determine if Licensing documentation was reviewed for impact and appropriately updated.
- e. Design documents are properly updated to reflect the modified system.
- f. Were all affected events, systems or equipment properly reviewed for interaction impact?

### **4.5 PLANT MODIFICATIONS**

Review selected temporary and permanent modifications made to the original system that could have changed the design or licensing basis. Determine whether the system meets the design basis and the licensing basis in the as-modified configuration.

- a. If original design basis documents did not exist for the system, did the modification adequately develop design documents to demonstrate meeting the functional requirements of the system?
- b. Installation and testing evaluations are limited to specific conditions unique to those phases.
- c. System interactions were reviewed by disciplines of:
  - Mechanical
  - Electrical
  - Instrumentation and Control
  - Equipment Qualification Program
  - Seismic Interactions
  - Safety Related/Non Safety Related boundaries and interactions (Mechanical, Electrical, Separation criteria)
  - Human Factors/Operator Error



## **Attachment C: Recommended SSFA Plan**

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- d. Tracking of temporary document updating for Temporary Modifications.
- e. Review the age of Temporary Modifications.
- f. Adequate post modification testing was performed to demonstrate the modified system meets the functional requirements for accident and abnormal conditions.

### **4.6 SAFETY EVALUATIONS**

Determine whether selected system modifications implemented since *[initial licensing]* have altered the design or licensing basis as described in the UFSAR.

- a. Did the 10CFR 50.59 or screening evaluation adequately determine if the activity involved a change in facility (design requirements, operation requirements, safety analysis and etc.)?
- b. Are applicable sections of the USAR, SERs, Commitments, applicable accident functions and Reports listed or reviewed?
- c. The Safety Evaluation addresses the effect on Safety Related equipment, equipment Important-to-Safety and procedures including system interactions.
- d. Adequate documentation exists to demonstrate why a change to the facility does not create a condition adverse to safety.
- e. Assumptions, methods and conclusions in the 50.59 evaluation have adequate detail and justification.

### **4.7 SYSTEM WALKDOWN**

*[Perform a walkdown of the system. Note the physical condition of the system.]*

Or

*[Based on the accessibility of the system during power (or shutdown) operations a system walkdown will not be conducted.]*

### **4.8 EVENT REPORTING AND CORRECTIVE ACTIONS**

Review LERs, Maintenance history and Corrective Actions for the past *[18]* months

- a. Was there an adequate Root Cause determination?
- b. Were there lasting corrective actions?
- c. Were operability evaluations necessary and adequate design basis documentation to support determinations?
- d. Review the Maintenance Rule data on the RCS for A1 placements, failure reports and trending. Were problems responded to via action plans? Were the actions correct and adequate?
- e. Review Operability Evaluations to determine adequacy of in-depth evaluation and corrective actions.

### **4.9 REGULATORY COMMUNICATION**

Review relevant regulatory information such as Information Notices, Generic Letters and industry operating experience.

## **Attachment C: Recommended SSFA Plan**

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- a. Were OE/OER reviewed for applicability to FCS and properly documented with design basis information?
- b. Were corrective actions initiated to prevent an occurrence?

### **4.10 SYSTEM HEALTH REPORTING AND MAINTENANCE RULE STATUS**

Review Operator Work Arounds, System Engineering Report Cards and Maintenance Rule status.

- a. Review the age of OWA and issues identified on SE Report Cards and MR to determine timeliness of corrective action.
- b. Does the OWA or deficiency effect accident mitigation actions and been adequately reviewed for safety impact?
- c. Management is aware of key aspects of OWA, MR status through appropriate monitoring of performance, material condition and records. Goals are used to improve performance and corrective action is taken when adverse conditions or trends are noted.

## **5. CLASSIFICATION OF OBSERVATIONS**

During the course of each reviewer's assessment of the subject system, Observations will be made. Observations are a problem or concern developed from reviews performed for this assessment. Observations may consist of strengths, weaknesses, adverse conditions, recommendations, areas not meeting expectations or areas of improvement. The following definitions will be used to classify each Observation for categorizing and summarizing the results of the assessment.

- 5.1 Recommendation: An observation defined as an area of improvement or not meeting expectations. Areas of improvement are activities that are being conducted in accordance with guidelines, procedures, or management expectations but could be conducted more cost effective, efficiently or add significant enhancements to the program.
- 5.2 Adverse Condition: A deficiency, failure, malfunction, deviation, abnormal occurrence, defective material or equipment, or non-conformance in an item or activity which has affected or reasonably could affect nuclear safety, compliance, personnel safety or plant reliability.
- 5.3 Strength: An activity that adds significant value to the program that includes the following key elements:
  - a. The activity clearly and directly enhances personnel skills, program effectiveness, or plant performance,
  - b. It is successfully implemented,
  - c. It makes effective use of resources or
  - d. It could serve as a model for other plants.

## **6. CONDUCT DURING THE INSPECTION**

*[Edit this section as appropriate.]*

- 6.0 Each Team Member shall adhere to the *[Host Utility's]* policies and *[Standing Orders]*.
- 6.1 During the performance of observations, should any Team Member see any acts that may create an immediate safety concern or poor radiological work practice, the activity shall be stopped and appropriate person(s) corrected on the spot. Personnel safety will always be a primary concern.
- 6.2 Each reviewer should develop an informal inspection plan consisting of areas of review, documents to be reviewed and personnel to be contacted. This plan should be communicated to the team leaders in order to provide access to documents and plant personnel
- 6.3 All Recommendation and Adverse Condition observations shall have a *[Condition Report]* written in accordance with *[host utility procedure]*
- 6.4 An SSFA entrance meeting will be held the first day of the inspection and exit meeting on the last day with a verbal summary draft report. A written report for review and comment will be provided to the *[host utility]* within *[two weeks]*.
- 6.5 Observations will be documented in a standard format on copies of Attachment 1, Reference 1. All observations will be submitted for inclusion in the final report that will be in the format of Attachment 2 of Reference 1.
- 6.6 If an area of work is currently in process to support an area of review, the reviewer should review the manner in which the work is being conducted
- 6.7 When an observation has been made, determine if a broader overall issue exists and, to the extent practical, determine if deficiencies are performance based. In addition, focus on causes or barriers that contribute to identified problems (strive to answer the question – WHY?).

## **7. REFERENCES:**

- 1. CEOG Resource Sharing Subcommittee Generic Assessment Plan, *[Latest Revision]*.
- 2. *[Utility specific procedure for engineering assessments]*
- 3. CEOG Safety System Functional Assessment, Lessons Learned, *[Latest Revision]*.

*[List other References as necessary]*

**Attachment D: CEOG Peer Assessor Feedback Form**

Following each assessment, the CEOG Project Manager will issue this form to each participating Peer to collect constructive feedback on the conduct of the SSFA.

**CEOG RSSC SSFA  
Peer Reviewer Feedback Form**

Topic	Strength Weakness
Event Pre-Planning: for example: Communication Documentation	
Travel – Logistics: for example: Site Location Lodging Restaurants	
Event Execution: for example: Availability of Information Availability of Support Equipment (PCs, Phones)  Access to physical plant  Co-operative nature of plant staff (availability, priority)	
Report Generation for example: On-site input and coordination  Post event actions and coordination	
Other: Please, provide a general discussion of "What did you learn" or "...get out of this":  Provide a general discussion of "What did you add" or "What was your specialty and was it valued / valuable?":	