Sdp \ Exercise1 \
Exercise1tables.pdf

SDP PHASE 1 SCREENING WORKSHEET FOR INITIATING EVENTS, MITIGATION SYSTEMS, AND BARRIERS CORNERSTONES

Reference/Title (LER #, Inspection Report #, etc):

Performance Deficiency (concise statement clearly stating deficient licensee performance):
Failure to follow vendor recommendations, included in the maintenance manual, for setting the seal oil backup differential pressure regulator.

Factual Description of Condition (statement of facts known about the condition that resulted from the performance deficiency, without hypothetical failures included):
Incorrect setting of backup differential pressure regulator resulted in a reactor/turbine trip.

System(s)/Train(s) Degraded by Condition: Turbine/generator.

Licensing Basis Function of System(s)/Train(s): Generate electrical power.

Other Safety Function of System(s)/Train(s): None.

Maintenance Rule Category (check one):

_✓__ risk-significant _____non risk-significant

Time condition existed or is assumed to have existed: < 3 days.

C-14

CORNERSTONES AND FUNCTIONS DEGRADED AS A RESULT OF DEFICIENCY (✔) Check the appropriate boxes		
INITIATING EVENTS CORNERSTONE	**MITIGATION SYSTEMS CORNERSTONE**	**BARRIERS CORNERSTONE**
❒ Primary System LOCA initiator contributor - (e.g., RCS leakage from pressurizer heater sleeves, RPV piping penetrations, CRDM nozzles, PORVs, SRVs, ISLOCA issues, etc.) ☒ **Transient initiator contributor (e.g., reactor/turbine trip, loss of offsite power, loss of service water, main steam/feedwater piping degradations, etc.)** ❒ Fire initiator contributor (e.g., transient loadings and combustibles, hotwork) ❒ Internal/external flooding initiator contributor	❒ Core Decay Heat Removal Degraded ❒ Short Term Heat Removal Degraded ❒ Primary (e.g., Safety Inj, [main feedwater, HPCI, and RCIC - BWR only]) ____ High Pressure ____ Low Pressure ❒ Secondary - PWR only (e.g. AFW, main feedwater, ADVs) ❒ Long Term Heat Removal Degraded (e.g., ECCS sump recirculation, suppression pool) ❒ Reactivity Control Degraded ❒ Seismic/Fire/Flood/Severe Weather Protection Degraded	❒ RCS Boundary as a mitigator following plant upset (e.g., pressurized thermal shock). Note: all other RCS boundary issues, such as leaks, will be considered under the Initiating Events Cornerstone. ❒ Containment Barrier Degraded ❒ Reactor Containment Degraded ___ Actual Breach or Bypass ___ Heat Removal, Hydrogen or Pressure Control Degraded ❒ Control Room, Aux Bldg/Reactor Bldg, or Spent Fuel Bldg Barrier Degraded ❒ Fuel Cladding Barrier Degraded

SDP PHASE 1 SCREENING WORKSHEET FOR IE, MS, and B CORNERSTONES
Check the appropriate boxes ✔

IF the finding is assumed to degrade:

1. fire protection defense-in-depth strategies involving: detection, suppression (equipment for both manual and automatic), barriers, fire prevention and administrative controls, and post fire safe shutdown systems, **THEN STOP. Go to** IMC 0609, Appendix F. Issues related to performance of the fire brigade are not included in Appendix F and require NRC management review.

2. steam generator tube integrity, **THEN STOP. Go to** IMC 0609, Appendix J.

3. the safety of an operating reactor, **THEN IDENTIFY** the degraded cornerstone(s):

   ☒ Initiating Event
   ☐ Mitigation Systems
   ☐ RCS Barrier (PTS issues only)
   ☐ Fuel Barrier
   ☐ Containment Barriers

IF TWO OR MORE of the above cornerstones are degraded ➛ **THEN STOP. Go to Phase 2.**

IF ONLY ONE of the above cornerstones is degraded, **THEN CONTINUE** in the appropriate column on page 4 of 5 of this worksheet.

NOTE: When assessing the significance of a finding affecting multiple cornerstones, the finding should be assigned to the cornerstone that best reflects the dominant risk of the finding.

Initiating Events Cornerstone	Mitigation Systems Cornerstone	RCS Barrier/ Fuel Barrier Cornerstones	Containment Barriers Cornerstone
LOCA Initiators 1. Assuming worst case degradation, would the finding result in exceeding the Tech Spec limit for identified RCS leakage or could the finding have likely affected other mitigation systems resulting in a total loss of their safety function. ☐ **If YES ➛Stop. Go to Phase 2.** ☐ If NO, screen as Green. Transient Initiators 1. Does the finding contribute to both the likelihood of a reactor trip AND the likelihood that mitigation equipment or functions will not be available? ☐ **If YES➛Stop. Go to Phase 2.** ☒ If NO, screen as Green. External Event Initiators 1. Does the finding increase the likelihood of a fire or internal/external flood? ☐ **If YES** ➛ Use the IPEEE or other existing plant-specific analyses to identify core damage scenarios of concern and factors that increase the frequency. Provide this input for **Phase 3** analysis. ☐ If NO, screen as Green.	1. Is the finding a design or qualification deficiency confirmed not to result in loss of operability per Part 9900, Technical Guidance, "Operability Determination Process for Operability and Functional Assessment"? ☐ **If YES, screen as Green.** ☐ If NO, continue. 2. Does the finding represent a loss of safety function? ☐ **If YES ➛Stop. Go to Phase 2** ☐ If NO, continue. 3. Does the finding represent actual loss of safety function of a single Train, for > its Tech Spec Allowed Outage Time? ☐ **If YES ➛ Stop. Go to Phase 2.** ☐ If NO, continue. 4. Does the finding represent an actual loss of safety function of one or more non-Tech Spec Trains of equipment designated as risk-significant per 10CFR50.65, for >24 hrs? ☐ **If YES ➛ Stop. Go to Phase 2.** ☐ If NO, continue. 5. Does the finding screen as potentially risk significant due to a seismic, flooding, or severe weather initiating event, using the criteria on page 5 of this Worksheet? ☐ **If YES** ➛ Use the IPEEE or other existing plant-specific analyses to identify core damage scenarios of concern and provide this input for **Phase 3** analysis. ☐ If NO, screen as Green.	1. RCS Barrier (e.g.,pressurized thermal shock issues) Stop. Go to Phase 3. 2. Fuel Barrier Screen as Green.	1. Does the finding only represent a degradation of the radiological barrier function provided for the control room, or auxiliary building, or spent fuel pool, or SBGT system (BWR)? ☐ **If YES** ➛ screen as Green. ☐ If NO, continue. 2. Does the finding represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere? ☐ **If YES ➛ Stop. Go to Phase 3.** ☐ If NO, continue. 3. Does the finding represent an actual open pathway in the physical integrity of reactor containment, or involve an actual reduction in defense-in-depth for the atmospheric pressure control or hydrogen control functions of the reactor containment? ☐ **If YES ➛ Stop. Go to Appendix H of IMC 0609.** ☐ If NO, screen as Green.

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Seismic, Flooding, and Severe Weather Screening Criteria

1. Does the finding involve the loss or degradation of equipment or function specifically designed to mitigate a seismic, flooding, or severe weather initiating event (e.g., seismic snubbers, flooding barriers, tornado doors)?

   ☐ **If YES** ➔ continue to question 2
   ☐ If NO ➔ skip to question 3

2. If the equipment or safety function is assumed to be completely failed or unavailable, are ANY of the following three statements TRUE? The loss of this equipment or function by itself, during the external initiating event it was intended to mitigate

   a) would cause a plant trip or any of the Initiating Events used by Phase 2 for the plant in question;

   b) would degrade **two or more** Trains of a multi-train safety system or function;

   c) would degrade one or more Trains of a system that supports a safety system or function.

   ☐ **If YES** ➔the finding is potentially risk significant due to external initiating event core damage sequences - return to page 4 of this Worksheet
   ☐ If NO, screen as Green

3. Does the finding involve the total loss of any safety function, identified by the licensee through a PRA, IPEEE, or similar analysis, that contributes to external event initiated core damage accident sequences (i.e., initiated by a seismic, flooding, or severe weather event)?

   ☐ **If YES** ➔the finding is potentially risk significant due to external initiating event core damage sequences - return to page 4 of this Worksheet
   ☐ If NO, screen as Green

Result of Phase 1 screening process:

☒ **Screen as Green** ☐ **Go to Phase 2** ☐ **Go to Phase 3**

Important Assumptions: