RA-6B4

SDP PHASE 1 SCREENING WORKSHEET FOR IE, MS, and B CORNERSTONES

Reference/Title (LER #, Inspection Report #, etc):IR 2004-002

Performance Deficiency (concise statement clearly stating the deficient licensee performance):

The licensee failed to restore the normal valve lineup for the Div 2 service water pump gland water supply following maintenance and prior to declaring SW Div 2 operable. This rendered SW Div inoperable as well as Div 2 RHR and the Div 2 EDG.

Factual Description of Identified Condition (statement of facts known about the finding, without hypothetical failures included):

On Jan 21, the DIV service water discharge strainer was bypassed for routine maintenance (cleaning). Per procedure, the gland water supply for the Div 2 pumps was cross-connected with the Div 1 pumps so as not to introduce debris in the Div 2 pump glands. This also required declaring Div 2 inoperable. Following the maintenance, the discharge strainer was returned to service and Div 2 of SW was declared operable but the gland water supplies remained cross-connected. This rendered Div 2 of SW inoperable per TS since this created an interdependence between the two division (Div 2 required Div 1 to be operable in order to supply gland water).

On Feb 11, the licensee was conducting a valve line up verification due to several spurious gland water low pressure alarms on Div 2. The incorrect line up was discovered as a result. The licensee appropriately declared Div 2 of SW inoperable as well as EDG 2 and Div 2 of RHR (for SPC and SDC - LPCI function was not affected).

System(s) and train(s) affected by identified condition:

Div 2 RHR (SDC & SPC)
Div 2 EDG
Div 2 SW

Licensing Basis Function of System(s) or Train(s) (as applicable):

Other Safety Function of System(s) or Train(s) (as applicable):

Maintenance Rule category (check one): [X] risk-significant [ ] non-risk-significant

Time that identified condition existed or is assumed to have existed:

20 days

Functions and Cornerstones affected as a result of this identified condition (check ✓)

INITIATING EVENT CORNERSTONE

- [ ] Transient initiator contributor (e.g., reactor/turbine trip, loss offsite power)
- [ ] Primary or Secondary system LOCA initiator contributor (e.g., RCS or main steam/feedwater pipe degradations and leaks)

MITIGATION SYSTEMS CORNERSTONE

- [X] Core Decay Heat Removal Degraded
  - [ ] Initial Injection Heat Removal Degraded
    - [ ] Primary (e.g., Safety Inj)
      - [ ] Low Pressure
      - [ ] High Pressure
    - [ ] Secondary - PWR only (e.g., AFW)
  - [X] Long Term Heat Removal Degraded (e.g., ECCS sump recirculation, suppression pool cooling)

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- [ ] Fire/Flood/Seismic/WeatherProtection Degraded
- [ ] Reactivity Control Degraded

BARRIERS CORNERSTONE

- [ ] RCS LOCA Mitigation Boundary Degraded (e.g., PORV block valve, PTS issue)
- [ ] Containment Barrier Degraded
  - [ ] Reactor Containment Degraded
    - [ ] Actual Breach or Bypass
    - [ ] Heat Removal, Hydrogen or Pressure Control Degraded
  - [ ] Control Room, Aux Bldg, or Spent Fuel Bldg Barrier Degraded
- [ ] Fuel Cladding Barrier Degraded

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Check the appropriate boxes ✔

If the finding is assumed to affect:
1. fire barrier or suppression features, then use IMC 0609 Appendix F.
2. the safety of a shutdown reactor, then use IMC 0609 Appendix G.
3. the safety of an operating reactor, then identify the affected areas:

[ ]	Initiating Event	[X]	Mitigation Systems	[ ]	RCS Barrier	[ ]	Fuel Barrier	[ ]	Containment Barriers

4. If **none** of the above areas is affected, then screen as Green.
5. If **two or more** of the above areas are affected, then **Go to Phase 2.**
6. If **only one** of the above areas is affected, then continue **only** in the **appropriate area** below.

Initiating Event

1. Does the finding contribute to the likelihood of a Primary or Secondary system LOCA initiator?

YES [ ] **Go to Phase 2**
NO [ ] Continue.

2. Does the finding contribute to both the likelihood of a reactor trip AND the likelihood that mitigation equipment or functions will not be available?

YES [ ] **Go to Phase 2**
NO [ ] Continue.

3. Does the finding increase the likelihood of a fire or internal/external flood?

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.
NO [ ] Screen as Green

Mitigation Systems

1. Is the finding a design or qualification deficiency confirmed not to result in loss of function per GL 91-18 (rev 1)?

YES [ ] Screen as Green
NO [X] Continue

2. Does the finding represent an actual loss of safety function of a System?

YES [X] **Go to Phase 2**
NO [ ] Continue

3.Does the finding represent an actual loss of safety function of a single Train, for longer than its Tech Spec Allowed Outage Time?

YES [ ] **Go To Phase 2**
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 (the Maintenance Rule), for >24 hrs?

YES [ ] **Go To Phase 2**
NO [ ] Continue

5. Does the finding screen as potentially risk significant due to a seismic, fire, flooding, or severe weather initiating event, using the criteria on the next page of this Worksheet?

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.
NO [ ] Screen as Green.

RCS Barrier or Fuel Barrier

1. RCS Barrier: **Go to Phase 2**
2. Fuel Barrier: Screen as Green.

Containment Barriers

1. Does the finding only represent a degradation of the radiological barrier function provided for the control room, auxiliary building, spent fuel pool, or SBGT system (BWR)?

YES [ ] Screen as Green
NO [ ] Continue.

2. Does the finding represent a degradation of the barrier function of the control room against smoke or a toxic atmosphere?

YES [ ] **Go to Phase 3**
NO [ ] Continue.

3. Does the finding represent an actual open pathway in the physical integrity of reactor containment or an actual reduction of the atmospheric pressure control function of the reactor containment?

YES [ ] **Screen using Appendix H of IMC 0609**
NO [ ] Screen as Green

Seismic, Fire, 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)? (Equipment and functions for the mitigation or suppression of fire initiating events, such as thermal wrap or sprinkler systems, should be evaluated using IMC 0609 Appendix F and not evaluated here)

YES [ ] Continue to question 2
NO [X] 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 the affected 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 **more than** a single Train of a multi-train safety system or function;
c) would degrade one or more Trains of a support system for a safety system or function.

YES [ ] The finding is potentially risk significant due to external initiating event core damage sequences - return to page 2 of this Worksheet
NO [X] 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, fire, flooding, or severe weather event)?

YES [ ] The finding is potentially risk significant due to external initiating event core damage sequences; return to page 2 of this Worksheet
NO [X] Screen as Green

Result of Phase 1 screening process:

[ ] Screen as Green [X] **Go to Phase 2** [ ] Input to Phase 3

Important assumptions (as applicable):

Table 1 Categories of Initiating Events for Cooper Nuclear Station

Row	Approximate Frequency	Example Event Type	Initiating Event Likelihood (IEL)		
I	> 1 per 1-10 yr	Transient with Reactor Trip (TRANS), Transient without the Power Conversion System (Loss of condenser, Closure of MSIVs) (TPCS)	1	2	3
II	1 per 10-10^2 yr	Loss of Offsite Power (LOOP), Stuck-open Relief Valve (SORV)	2	3	4
III	1 per 10^2 - 10^3 yr	Loss of Reactor Building Closed Cooling Water System (TREC), Loss of 125V DC Bus A or B (TDCA, TDCB), Loss of Instrument Air (TIA)	3	4	5
IV	1 per 10^3 - 10^4 yr	Small LOCA (SLOCA), Medium LOCA (MLOCA), Loss of Service Water (TSW)	4	5	6
V	1 per 10^4 - 10^5 yr	Large LOCA (LLOCA), ATWS, Loss of Critical 4160V AC Bus F or Bus G (TACF or TACG)	5	6	7
VI	less than 1 per 10^5 yr	ISLOCA	6	7	8
			> 30 days	3-30 days	< 3 days
			Exposure Time for Degraded Condition		