

System	BWR type	Entering mode
Boiling Water Reactor Owners Group (BWROG) Plants		
High Pressure Coolant Injection (HPCI) System .....	BWR 3 & 4 .....	2, 1.
High Pressure Core Spray (HPCS) .....	BWR 5 & 6 .....	2, 1.
Reactor Core Isolation Cooling (RCIC) System .....	BWR 3, 4, 5 & 6 .....	2, 1.
Isolation Condenser .....	BWR 2 .....	2, 1.
Diesel Generators (including other Emergency/Shut-down AC Power Supplies).	All .....	All.
Hardened Wetwell Vent System .....	BWR 2, 3 & 4 with Mark I Containment .....	3, 2, 1.
Residual Heat Removal System .....	All .....	4.
System		Entering mode
Babcock & Wilcox Owners Group (B&WOG) Plants		
Emergency Diesel Generators (EDG) & Hydro-Electric Units for Oconee .....	5, 4, 3, 2, 1.	
Emergency Feedwater (EFW) System .....	1.	
Decay Heat Removal (DHR) System .....	5, 4.	
Combustion Engineering Owners Group (CEOG) Plants		
Emergency Diesel Generators (EDGs) .....	5, 4, 3, 2, 1.	
Auxiliary Feedwater/Emergency Feedwater (AFW/EFW) System .....	4, 3, 2, 1.	
High Pressure Safety Injection (HPSI) System .....	4, 3 (below 1700 psia).	
LTOP/PORVs (when used for Low Temperature Overpressure Protection (LTOP)) .....	5, 4 (below set temperature)	
Shutdown Cooling System (Low Pressure Safety Injection (LPSI) pumps) .....	5.	
Westinghouse Owners Group (WOG) Plants		
Emergency Diesel Generators (EDGs) .....	5, 4, 3, 2, 1.	
Auxiliary Feedwater (AFW) System (for plants depending on AFW for startup) .....	4, 3, 2, 1.	
High Head Safety Injection System .....	4.	
Cold Overpressure Protection System .....	5, 4.	
Residual Heat Removal (RHR) System .....	5.	

If a licensee identifies a higher-risk system for only some of the modes of applicability, the TS for that system would be modified by a note that reads, for example, "LCO 3.0.4(b) is not applicable when entering MODE 1 from MODE 2." Systems identified as higher risk for Modes 5 and 6 for PWRs, and Modes 4 and 5 for BWRs, are also excluded from transitioning up to the mode of higher risk, and as previously discussed, notes for those transitions are superfluous. In addition, mode transitions for Modes 5 and 6 for PWRs, and Modes 4 and 5 for BWRs, will be addressed by administrative controls.

In summary, the staff's review of the owners groups qualitative risk assessments finds that they are of adequate quality to support the application (*i.e.*, they identify the higher-risk systems and components) associated with entering higher modes of plant operation with equipment inoperable while returning to power. [Plant Specific changes will be described here.]

#### *Limited Time in TS Required Actions*

Any temporary risk increase will be limited by, among other factors, duration constraints imposed by the TS CTs of the inoperable systems. For the

systems and components which are not higher risk, any temporary risk increase associated with the proposed allowance will be smaller than what is considered acceptable when the same systems and components are inoperable at power. This is due to the fact that CTs associated with the majority of TS systems and components were developed for power operation and pose a smaller plant risk for action statement entries initiated or occurring at lower modes of operation as compared to power operation.

The LCO 3.0.4(b) allowance will be used only when the licensee determines that there is a high likelihood that the LCO will be satisfied following the mode change. This will minimize the likelihood of additional temporary risk increases associated with the need to exit a mode due to failure to restore the unavailable equipment within the CT. In most cases, licensees will enter into a higher mode with the intent to move up to Mode 1 (power operation). As discussed in Section 3.2, the revised reactor oversight process monitors unplanned power changes as a performance indicator. The reactor oversight process thus discourages licensees from entering a mode or other specified condition in the applicability

of an LCO, and moving up in power, when there is a likelihood that the mode would have to be subsequently exited due to failure to restore the unavailable equipment within the CT. Another disincentive for licensees to enter a higher mode when an LCO is not met is related to reporting requirements. 10 CFR 50.72 and 50.73 make it clear that a report is required when a nuclear plant shutdown or mode change is required by TS. The NRC's oversight program will provide the framework for inspectors and other staff to follow the history at a specific plant of entering higher modes while an LCO is not met, and use such information in assessing the licensee's actions and performance.

#### 3.1.2 Cumulative Risk Increases

The cumulative risk impact of the change to allow the plant to enter a higher mode of operation with one or more safety-related components unavailable (as proposed here), is measured by the average yearly risk increase associated with the change. In general, this cumulative risk increase is assessed in terms of both CDF and LERF (*i.e.*,  $\Delta$ CDF and  $\Delta$ LERF, respectively). The increase in CDF due to the proposed change is expressed by the following equation, which integrates the