

## LCO 3.0.6 BASES

LCO 3.0.6 establishes an exception to meet the requirements of LCO 3.0.2 for systems that have a support LCO specified in the Technical Specifications (TS). This exception is provided because applying LCO 3.0.2 would require entry into the Conditions and Required Actions of a supported system(s) solely due having an associated support system LCO not met.

LCO 3.0.6 applies when a support system is inoperable and there is an LCO specified for it in the TS. The general exception provided by LCO 3.0.6 is that the supported system(s) Conditions and Required Actions are not required to be met. This general exception is justified because the requirements necessary to ensure the unit is maintained in a safe condition are contained in the support system TS Conditions and Required Actions. By applying the general requirements of LCO 3.0.6 potential confusion and inconsistency that could result from requirements to meet multiple support and supported system(s) TS Conditions and Required Actions is eliminated without compromising safe operation of the unit.

However, the general exception also requires that when a determination is made that the supported system(s) is inoperable as a result of the support system inoperability, then the supported system(s) must be declared inoperable even though the Conditions and Required Actions are not required to be met. Additionally, supported system(s) Conditions and Required Actions may apply when support system TS contain Required Actions that either direct a supported system to be declared inoperable or direct entry into Conditions and Required Actions for the supported system(s). Regardless of the time period for applying the support system(s) Required Actions, all supported system(s) Conditions and Required Actions shall be entered in accordance with LCO 3.0.2.

Specification 5.5.15, Safety Function Determination Program (SFDP), implements the requirements of LCO 3.0.6. The SFDP contains a requirement to include provisions for cross train checks when LCO 3.0.6 is entered. The SFDP provisions for cross train checks ensure that a loss of the capability to perform a safety function assumed in the accident analysis does not go undetected. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. When a loss of safety function is caused by the inoperability of a single TS support system, the appropriate Conditions and Required Actions to enter are those of the support system.

The following examples use Figure B 3.0-1 to illustrate loss of safety function conditions that may result when a TS support system is inoperable. In this figure, the fifteen Systems that comprise Train A are independent and redundant to the fifteen Systems that comprise Train B. To correctly use the figure to assess SFDP provisions for a cross train check the figure establishes a relationship between support and supported systems as follows: the figure shows System 1 as a TS support system for System 2; System 2 as a TS support System for System 4 and System 5; and System 4 as a TS support system for System 8 and System 9.

Specifically, a loss of safety function may exist when a support system is inoperable, and:

- a. A required system redundant to system(s) supported by the inoperable support system is also inoperable. (EXAMPLE B 3.0.6-1);
- b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable (EXAMPLE B 3.0.6-2); or
- c. A required system redundant to support system(s) for the supported systems (a) and (b) above is also inoperable (EXAMPLE B 3.0.6-3).

EXAMPLE B 3.0.6-1 (Refer to Figure B 3.0-1)

If System 2 of Train A is discovered to be inoperable and System 5 of Train B is known to be inoperable, then a loss of safety function exists in Systems 5, 10 and 11.

EXAMPLE B 3.0.6-2 (Refer to Figure B 3.0-1)

If System 2 of Train A is discovered to be inoperable, and System 11 of Train B is known to be inoperable, then a loss of safety function exists in System 11.

EXAMPLE B 3.0.6-3 (Refer to Figure B 3.0-1)

If System 2 of Train A is discovered to be inoperable, and System 1 of Train B is known to be inoperable, then a loss of safety function exists in Systems 2, 4, 5, 8, 9, 10, and 11.

If an evaluation determines that a loss of safety function exists, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered. The Conditions and Required Actions of the LCO for systems: 5, 10, and 11 in Example B 3.0.6-1; 11 in Example B 3.0.6-2; and 2, 4, 5, 8, 9, 10 and 11 in Example B 3.0.6-3 must be entered.

[insert Figure B 3.0-1, Configuration of Trains and Systems]

This loss of safety function does not require presuming additional equipment failures or loss of offsite power because plant operations are being restricted in accordance with the ACTIONS of the support system which takes into account loss of redundant equipment, including loss of single failure protection. For example, AC electrical power source TS ACTIONS for inoperable offsite circuit(s) and inoperable diesel generator(s) provide the necessary restrictions when redundant trains of diverse equipment are inoperable. The AC electrical power sources TS acknowledges that supported system(s) are not required to be declared inoperable solely as a result of a normal or emergency electrical power source being inoperable (refer to the definition of OPERABILITY).

When loss of safety function is determined to exist, and the SFDP requires entry into the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists, consideration must be given to the specific type of function affected. Where a loss of function is solely due to a single Technical Specification support system (e.g., loss of automatic start due to inoperable instrumentation, or loss of pump suction source due to low tank level) the appropriate LCO is the LCO for the support system. The ACTIONS for a support system LCO adequately addresses the inoperabilities of that system without reliance on entering its supported system LCO. When the loss of function is the result of multiple support systems, the appropriate LCO is the LCO for the supported system.