

## NEI's Text Changes

### USE OF SOFTWARE AND DIGITAL DEVICES

#### 3.2.1.2 SSC Characteristics

During the original licensing process, the characteristics of SSCs in the facility may have been a consideration. In general, different SSCs may be equivalent, similar or identical to one another physically or functionally.

The UFSAR may identify SSC features explicitly or implicitly describe the characteristics of SSCs through diversity, separation, independence, defense-in-depth and/or redundancy discussions. With digital modifications, software and/or hardware have the new equipment has the potential to impact the diversity, separation, independence, defense-in-depth, and/or redundancy of the SSCs identified implied by or described in the UFSAR.

To assist in determining the impact of a digital modification on the diversity, separation, independence, defense-in-depth and/or redundancy of the affected SSC components, identify the features characteristics of the affected SSCs implied by or described in the UFSAR. Compare the proposed features characteristics of the affected SSCs with the existing features characteristics of the affected SSCs. The impact of any differences in the characteristics of SSCs on diversity, separation, independence, defense-in-depth and/or redundancy on the design functions described in the UFSAR of the affected SSCs is then determined.

A digital modification that would reduce SSC diversity, separation, independence, defense-in-depth and/or redundancy is adverse.

An adverse effect may also consist of the potential marginal increase in the likelihood of SSC failure due to the introduction of software. For redundant safety systems, this marginal increase in likelihood creates a similar marginal increase in the likelihood of a common failure in redundant safety systems. On this basis, most digital modifications to redundant safety systems are adverse. However, for some digital modifications, engineering evaluations may show that the digital modification contains design attributes that meet NRC-endorsed acceptance criteria to eliminate consideration of software common cause failure. In such cases, even when it affects redundant systems, the digital modification would be not adverse.

Alternately, the For redundant SSCs that must satisfy single failure criteria requirements, the following guidance applies:

1. The use of the same software in two or more redundant SSCs is ADVERSE because the independence of the SSCs has been reduced.

2. The use of different software in two or more redundant SSCs is not adverse NOT ADVERSE because the there independence of the SSCs has been maintained.

3. The use of exactly the same or different hardware in two or more redundant SSCs is no potential marginal increase subject to the same licensing considerations as described in the likelihood of failure due to UFSAR as those for non digital SSCs and a conclusion of ADVERSE or NOT ADVERSE is determined in the introduction of software same manner as for non digital proposed activities.

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