

NEI's New Text

USE OF SOFTWARE AND DIGITAL DEVICES

The UFSAR may identify SSC features through diversity, separation, independence, defense-in-depth and/or redundancy discussions. With digital modifications, software and/or hardware have the potential to impact the diversity, separation, independence, defense-in-depth, and/or redundancy of SSCs identified 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 SSCs, identify the features of the affected SSCs described in the UFSAR. Compare the proposed features of the affected SSCs with the existing features of the affected SSCs. The impact of any differences in the 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 use of different software in two or more redundant SSCs is not adverse because the there is no potential marginal increase in the likelihood of failure due to the introduction of software.

**Commented [CN1]:** Comment No. 6: Title changed in response to this comment, but this change was not specifically requested.

NRC has no objection.

**Commented [CN2]:** Comment No. 7: Phrase "defense-in-depth" added in response to this comment.

NRC agrees: No issues with this change

**Commented [CN3]:** Comment No. 7: Sentence added in response to this comment.

NRC agrees: No issues with this change

**Commented [CN4]:** Comment 6: Text proposed by NRC was modified and inserted.

NRC agrees: No issues with this change