Southern Nuclear

Vogtle Pre-Submittal Meeting to Revise Technical Specification Surveillance Requirement 3.3.5.2 Allowable Values

January 19, 2021

Meeting Purpose and Agenda

- The purpose for this meeting is to discuss proposed amendment request to revise Technical Specification Loss of Power Surveillance Requirement 3.3.5.2 Allowable Values from analytical limits to allowable values
- This meeting will cover the following topics:
  - Background on Loss of Power Function
  - Proposed License Amendment Request

Background on Loss of Power Function

Background

- 4 Diesel Generator Start Circuits
  - Two modes that initiate the DG start logic are:
    - Loss of voltage
    - Degraded Voltage
  - 2 out of 4 logic
- Technical Specification (TS) requirements are 4 channels of loss of voltage and degraded voltage Function Operable per safety related 4.16 kV bus.
  - Channels are Operable when the trip setpoints meet their required values and delay times and are conservative to their allowable value.

Applicable Safety Analysis Discussion

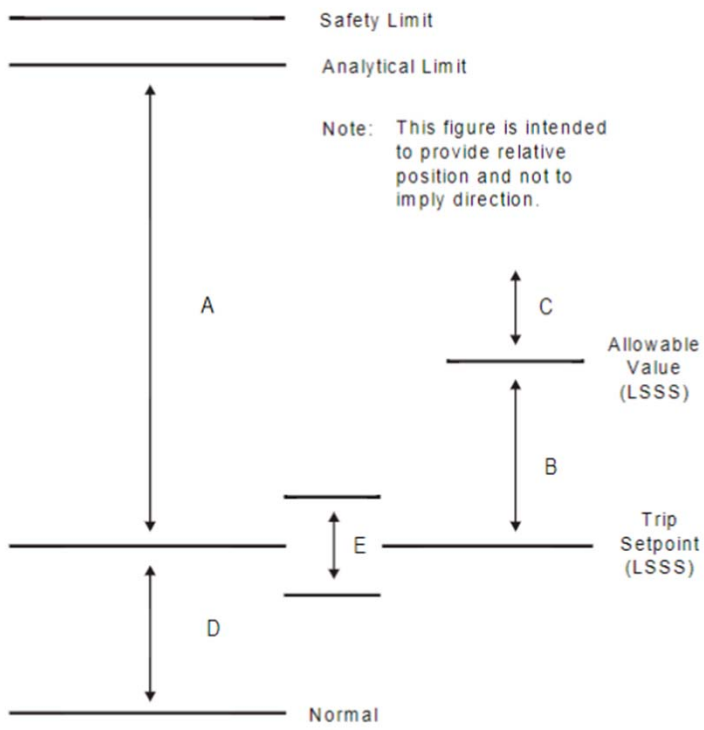
- Accident analyses credit the loading of the DGs based on a loss of offsite power during a LOCA
- The DG loading time is included in the delay time of each safety system component following a loss of offsite power
- The trip setpoint for the loss of voltage and the degraded voltage Functions are derived from the analytical limits for these Functions presented in Chapter 15 of the Final Safety Analysis Report

Setpoint Analysis

- ISA 67.04 1994 established a method (Method 3) to calculate an Allowable Value.
  - This ISA standard has been endorsed by the NRC in Regulatory Guide 1.105, Revision 3
- To calculate an Allowable Value using Method 3
  - The Nominal Trip Setpoint is determined from the Analytical Limit in UFSAR Chapter 15. The Nominal Trip Setpoint separation from the Analytical Limit is based on a combination of all errors.
  - The Allowable Value is then determined from the Nominal Trip Setpoint and is based on errors present during calibration.
- This relationship is shown graphically on the next slide

Setpoint Analysis

Setpoint relationships of nuclear safety related setpoints from Regulatory Guide 1.105, revision 3 and ISA 67.04 - 1994



A. Allowance described in paragraph 4.3.1
B. Allowance described in paragraph 4.3.1
C. Region where channel may be determined inoperable
D. Plant operating margin
E. Region of calibration tolerance (acceptable as left condition) described in paragraph 4.3.1

Proposed License Amendment Request

Proposed License Amendment Request

- The Allowable Value contained in the current Technical Specification is the analytical limit from FSAR Chapter 15.
  - Using Analytical Limits as Allowable Values conflicts with the Standard Technical Specifications and creates the possibility that the trip setpoints will be insufficient to perform their required trip function

- SNC proposes to change the Technical Specification to replace the Analytical Limit with the appropriate Allowable Value

Technical Specification Surveillance Requirement 3.3.5.2

Current SR 3.3.5.2

- Loss of voltage Allowable Value ≥ 2912 V with a time delay of ≤ 0.8 second
- Loss of voltage Nominal Trip Setpoint 2975 V with a time delay of ≤ 0.8 second

- Degraded voltage Allowable Value ≥ 3683 V with a time delay of ≤ 20 seconds
- Degraded voltage Nominal Trip Setpoint 3746 with a time delay of ≤ 20 seconds

Proposed SR 3.3.5.2

- Loss of voltage Allowable Value ≥ 2958.2 V with a time delay of ≤ 0.8 second.
- Loss of voltage Nominal Trip Setpoint 2975 V with a time delay of ≤ 0.8 second

- Degraded voltage Allowable Value ≥ 3729.2 V with a time delay of ≤ 20 seconds
- Degraded voltage Nominal Trip Setpoint 3746 with a time delay of ≤ 20 seconds

Calculation of Allowable Value

- TS AV for Loss of Voltage $\geq$ [Nominal Trip Setpoint – (RCA X span voltage$_{pri}$)]

  $\geq$ [2975 VAC – (0.0032 x 5250 VAC)]
  $\geq$ 2958.2 VAC

- TS AV for Degraded Voltage $\geq$ [Nominal Trip Setpoint – (RCA X span voltage$_{pri}$)]

  $\geq$ [3746 VAC – (0.0032 x 5250 VAC)]
  $\geq$ 3729.2 VAC

RCA = Rack Calibration Accuracy

Nominal Trip Setpoint is from Technical Specification Surveillance Requirement 3.3.5.2 and is not changed by this request

Questions?