TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

TSTF / NRC Meeting
February 18, 2016

Addressing Channel Components Calibration Frequency Under the Surveillance Frequency Control Program

1

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Background

- The definition of Channel Calibration states:
  - A CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds within the necessary range and accuracy to known values of the parameter that the channel monitors. *The CHANNEL CALIBRATION shall encompass all devices in the channel required for channel OPERABILITY. ... The CHANNEL CALIBRATION may be performed by means of any series of sequential, overlapping, or total channel steps*.

2

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Background

- Three-quarters of operating plants have adopted or requested adoption TSTF-425, "Surveillance Frequency Control Program," which allows the licensee to alter the Frequency of most Surveillances under the Surveillance Frequency Control Program (SFCP), which requires following NEI 04-10, "Risk-Informed Method for Control of Surveillance Frequencies."
- TSTF-425 and the SFCP do not alter the Surveillance, only the Frequency.

SURVEILLANCE		FREQUENCY
SR 3.3.1.1	Perform CHANNEL CHECK.	[12 hours OR In accordance with the Surveillance Frequency Control Program]

3

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Background

- A typical instrument channel consists of many different devices, such as sensors, rack modules, and indicators. These devices have different drift characteristics.
- The Channel Calibration definition allows the SR to be performed by means of any series of sequential, overlapping, or total channel steps.
- The Channel Calibration definition encompasses all devices in the channel, and the SFCP and TSTF-425 do not allow changes to the Surveillance statement, such as, "Perform a Channel Calibration."
- As a result, all devices that makeup a channel must be calibrated at a frequency equal to the channel device with the shortest frequency.

4

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Problem Statement

- Recent work by the PWROG has determined that the performance characteristics of some channel devices, such as pressure and differential pressure transmitters, could support a substantially longer calibration frequency.
  - It's anticipated that similar studies of other devices would demonstrate similar results.
- Under the current definition of Channel Calibration and the requirements of the SFCP, licensees are burdened with more frequent device calibration than necessary simply because the component is part of a channel.

5

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Benefits

- Applying the appropriate the calibration frequency to each component in a channel has several benefits:
  - Reduces dose associated with in-place calibration of sensors
  - Reduces wear on equipment
  - Reduces burden on plant staff
  - Reduces opportunities for calibration errors
  - Reduces scope of in-containment outage work
- Other indications of channel health are not affected, such as Channel Checks, Channel Operational/Functional Tests, and on-line monitoring of parameters.

6

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Potential Solutions

- The TSTF considered two solutions:
  - Add new SRs
  - Revise the SFCP and, potentially, the Channel Calibration definition
- Both approaches utilize the methodology in NEI 04-10 and the SFCP to ensure components are tested at an appropriate frequency to support safe plant operation.
  - Setpoints are not affected.
- Neither approach justifies a change in testing frequency. Both approaches make structural changes to the TS to allow evaluation of proposed frequency changes under the SFCP.

7

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Add New SRs

- Create new Channel Calibration SRs in the TS that exclude calibrating specific devices, such as pressure and differential pressure transmitters.
- The Channel Calibration SRs with the new exclusion note would be performed at the current Frequency.
- The Channel Calibration SRs without the exclusion note, which includes all of the devices in the channel, would be performed at a longer Frequency determined under the SFCP.
- For example, if the current SR has a Frequency of 18 months and under the SFCP a Frequency of 54 months for the sensor can be justified, performance would be like:
  - CC w/o sensor ➡ CC w/o sensor ➡ CC with sensor

8

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Add New SRs

- Pros
  - Straightforward application of the existing requirements.
  - There are existing similar notes in the ISTS, such as excluding neutron detectors from Channel Calibrations.
- Cons
  - Would require extensive additions to the TS instrument function tables.
  - Only applicable to specific devices and specific functions at a time, requiring additional travelers and licensee TS changes as additional devices are evaluated.

9

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Revise the SFCP and Potentially the Definition

- Revise the Surveillance Frequency Control Program to allow performing Channel Calibrations in any series of sequential, overlapping, or total channel steps, with each step being tested within the Frequency justified under the SFCP.
- It may be necessary to make corresponding changes to the definition of Channel Calibration.
- This would be a new traveler. It would not revise TSTF-425.

10

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Revise the Definitions and SFCP

- Pros
  - Generic approach applicable to other channel components evaluated in the future.
  - Minimizes the changes to the TS.
- Cons
  - Changes a TS definition that hasn't changed since 1999.
  - Would require a license amendment by plants that have already adopted TSTF-425.

11

TSTF

Technical Specifications Task Force
A Joint Owners Group Activity

Discussion

- The TSTF is interested in discussion and feedback from the NRC staff regarding these two options or other options.

12