

Temperature provider

System Description

Abstract

This document describes a temperature provider system, handling the generation and provides an endpoint the get the most recently generated value of temperature. If a generated value would be above a critical limit a critical temperature event will be published to the event handler support system.

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1 Overview

This document describes the temperature provider system. This system calculates a temperature level based on the previously written temperature level, read from a csv file with the key being the timestamp written in milliseconds and the value the current temperature level. A randomly generated value will be added to the temperature value read from the file, multiplied with a linear factor. The linear factor depends on the value of the previous reading, and will be closer to 0 the higher the reading was.

If a temperature level above the critical limit was generated a critical temperature event will be published with the current temperature reading in the payload.

2 System Role

This system provides a service for getting the most recent temperature value. This service is accessed via the HTTPS protocol and needs a token from the authorization core system to be accessed.

This system consumes the control rod insertion service in order to control the reactor temperature and temperature levels. This is done via HTTPS secured REST service, secured by the authorization core system. For extra security the system subscribes to events, in order for a quicker shutdown if needed.

3 Services

3.1 Consumed Services

3.1.1 Event Publish

Makes the temperature providers events available to the event handler.

3.1.2 Service Registry

This service is consumed to make sure that the system becomes accessible to other systems.

3.1.3 Orchestration

This service is used to determine what [Event Publish](#) and [Contract Negotiation](#) services to utilize.

3.2 Produced Services

3.2.1 Get latest temperature

Fetches the most recent temperature value and returns it as an integer.