Report VGB-TW805e

Centralized Reliability and Events Database

Reliability Data for Nuclear Power Plant Components

(Basis edition and enclosed 1st and 2nd upgrading)

Description

The Centralized Reliability and Events Database (ZEDB) provides reliability data that can be used in probabilistic safety analyses (PSAs) conducted by the owners/ operators of nuclear power plants. Therefore, the database gathers and analyzes operating experience gained at a large number of nuclear power plants. The main focus is on mechanical and electrical components. The ZEDB use the two-stage Bayesian models to calculate plant-specific and generic reliability data. The analyses are performed for multitude of component populations created for following component prototypes: valves, pumps, fans/ compressors, emergency diesel generators, batteries, rotating inverters, static converters, transformers, busbars, circuit breakers, vessels/ tanks, heat exchangers, and control assembly/ control rods.

The publication provides the results of these analyzes. In addition to the tables of results, including characterization of components population, generic and plant-specific values (5% quantile, 50% quantile (median) and 95% quantile, k factor, mean value), the report contains also an overview of the ZEDB and the method of analysis.

As of December 2006, the format used for publishing the ZEDB analysis results has been changed over to the loose-leaf compilation presented here. Now it is possible to update the analysis results to incorporate new operating experience and to expand the scope of analyzed components by supplying loose-leaf sheets to replace or supplement the previous contents, without having to publish the entire data book again.

The published bundle of several reports (TW 805e) already includes the basis edition (December 2006), the 1st upgrading (December 2007), and the 2nd upgrading (December 2008).

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