Commercial-grade Dedication

Commercial-grade dedication is a process by which a commercial-grade item (CGI) is designated for use as a basic component. This acceptance process is undertaken to provide reasonable assurance that a CGI to be used as a basic component will perform its intended safety function and, in this respect, is deemed equivalent to an item designed and manufactured under e.g. 10 CFR Part 50, Appendix B, quality assurance program. This assurance is achieved by identifying the critical characteristics of the item and verifying their acceptability by inspections, tests, or analyses by the purchaser or third-party dedicating entity.

Commercial-grade dedication is part of the AREVA Competence Center for Cross Qualification. The objective of CGI is to define responsibilities and actions necessary to dedicate CGIs and services for safety-related applications in compliance with 10CFR21 requirements.

General Requirements

When items are procured as commercial grade with the intent to dedicate that item to a nuclear safety-related application (i.e. use as part of a basic component) a dedication plan is prepared. The AREVA expert on the specific field will analyze and evaluate all configuration and functional characteristics of the item that relate to its satisfactory performance within its safety-related application area.

Appropriate analyses, tests or inspections to verify the prescribed characteristics are documented in the dedication plan prepared by the AREVA expert. Qualification documentation as available also including European codes and standards will be considered.

In addition, the AREVA expert will include-any actions or requirements in response to e.g. NRC Generic Letter 89-02 and 91-05 and EPRI NP-5652 “Guidance for the Utilization of Commercial-grade Items in Nuclear Safety-related Applications (NCIG-07)”.

The AREVA process for CGI
Dedication Plan
The planned actions to dedicate a CGI are documented in a dedication plan. This plan includes the following items as applicable:

- Scope and purpose
- Terms, abbreviations, acronyms
- References
- CGI identification
- Essential elements of the dedication process
- Safety-related functions
- Critical characteristics identification and acceptance criteria
- Demonstration of functional capability
- Special analyses, inspections and tests
- Commercial-grade survey of suppliers
- CGI performance records
- Limitation of the dedication.

Dedication Report
The dedication report includes the same items as the dedication plan and gives the results of the verification activities for the dedicated items including the results of special analyses, inspections and tests as well as references to the procedures and instructions applied by the dedicating entity or its suppliers.