



Graver Technologies

Quality Assurance Program Description

Graver Technologies specializes in trace contaminant removal from condensates, process waters and other fluids. Some of the most demanding customers are the electric power generating stations. Fossil fuel stations, as well as boiling water (BWR) and pressurized water (PWR) reactor plants, around the world, routinely use many Graver Technologies' products to purify their water systems.

Powdex[®] and Ecodex[®] powdered resin precoat products are used for condensate polishing, radwaste, fuel pool and reactor water clean-up applications. The Gravex[®] bead resin products are used for condensate polishing, radwaste, steam generator blowdown demineralizers, stator coolers, and primary side purification of reactor coolant water. Primary resins may be classified as safety related, which invokes specialized quality requirements, including reporting of anomalies to the NRC. Graver Technologies has never had a reportable event.

All resins for the applications listed above are processed under a quality assurance program meeting the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B. This is commonly referred to as 10CFR50 App B and is titled Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants. Although nearly identical to the newer ISO requirements, the Appendix B Nuclear Program is more focused on quality parameters that impact performance. Originally written in 1979, Graver Technologies' QA Program is continually upgraded and has evolved into a comprehensive plan for providing exceptional products.

The Quality Assurance Manual describes the basic framework of the program referencing the criteria of 10CFR50 App B. A series of implementing procedures insures adherence to the requirements. QA procedures describe all aspects of the program including procurement, training, document control, calibration, & non-conformances to name a few. Manufacturing procedures and process instructions describe the steps necessary to produce products and prepare them for shipment. A comprehensive group of QC test methods is used to evaluate raw materials, check in-process product status, and to test final products. A sample of every product batch is retained in a sample library for a minimum of two years.

The quality requirements are very stringent and Graver Technologies has been audited by a vast majority of US nuclear utilities. More recently the audits are conducted jointly by several utilities, using a NUPIC (Nuclear Utilities Procurement Issues Committee) approved checklist. All member utilities can then share the audit results. Graver has successfully completed every audit.

Graver Technologies is committed to operating a fully functional Quality Assurance Program. This helps us to meet our customers' needs and expectations by manufacturing and providing the highest quality products suitable for the intended application.



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Quality Assurance Program Outline

- Company Commitment To Quality
- Designed to meet the requirements of Title 10 of the Code of Federal Regulations, Part 50, Appendix B (10CFR50 App. B), titled Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants.
- Graver Technologies' Program began in 1979 and continually upgraded.
- QA Manual - Describes the basic framework of the program according to the criteria of 10CFR50 Appendix B.
- Implementing Procedures
 - Quality Procedures - Procedures used for program's QA aspects.
 - Manufacturing Procedures - Manufacturing & Process Instructions for production of all GT products.
 - QC Test Methods - Analytical procedures
- One Manufacturing Strategy
 - Continuous improvement in equipment, process techniques, training, and products.