



Graftel, Inc. Heat Exchanger Performance Analysis and Testing Services

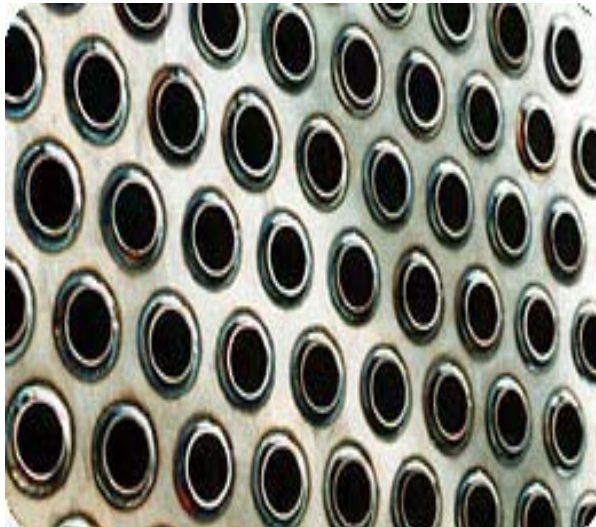


Graftel, Inc. in conjunction with Proto-Power is providing performance testing services for heat exchangers included in the scope of the GL 89-13 program

Graftel has over 18 years of on-site nuclear plant support experience. This includes: Heat Exchanger Performance Testing, Integrated Leakage Rate Testing, Structural Integrity Testing and On-Site Instrument Calibrations. All of our field personal have been recently badged at a nuclear power plant and work under our Appendix B quality program, (recent NUPIC audit on file)

Graftel, Inc.
www.graftel.com
870 Cambridge Drive
Elk Grove Village, IL. 60007
P. 847-364-2600 - F. 847-364-2899

Graftel's approach to heat exchanger testing and analysis is consistent with the methodology presented in the EPRI document TR-107397, "Service Water Heat Exchanger Testing Guidelines." The testing services provided support the site's heat exchanger testing program while keeping it consistent with EPRI guidelines utilizing the four step method outlined below.



1. Test plan development

A testing plan is developed that includes the below items:

- Establish the test objectives, acceptance criterion, analytical methodology, test conditions and overall target test uncertainty
- Specification of measurement system and test methodology.
- Test uncertainty analysis.

2. Test procedure development

The test procedure is developed in accordance with utility specific procedure requirements. The test procedure will provide the step-by-step process for ensuring the requirements of the test plan are carried out in a manner that will ensure the test is conclusive. The procedure will include instructions for proper installation of required sensors so that their performance stays within criteria specified by the test plan.

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3. Test implementation

This includes PCs loaded with data collection software, all required instrumentation and cabling, instrument calibration, on-site support installing instrumentation; obtaining and recording all test data as well as providing recommendations for operations personnel in establishing optimum system configurations and heat loads.

4. Performance evaluation

This evaluation includes the following key elements:

- Statistical analysis of the test data reducing it to a set of input parameters for thermal performance analysis.
- Thermal performance analysis utilizing PROTO-HX™ or a utility provided analytical package.
- A detailed post-test uncertainty analysis that provides the 95 percent confidence range around the calculated heat exchanger performance parameter
- A final test report containing the above information.

Graftel, Inc. maintains an Appendix B QA program implementing 10 CFR 50 Part 21. Our calibration, software and engineering services have been recently audited and recorded in the NUPIC database. In addition, Graftel's is an accredited ISO 17025 instrument calibration laboratory, certified by LAB.

Graftel's team of recently nuclear plant badged personnel are instrumentation, calibration and data collection experts.

Proto-Power's engineering services are subcontracted by Graftel. They provide heat exchanger expertise as well as the analysis software, (PROTO-HX) which is recognized as the industry standard.

Contact Us for more information how we can help you

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