



# Case study

## Improving operational efficiency: Bespoke computer systems development

### THE CHALLENGE

British Energy Generation Ltd required medium and long term predictions of graphite weight loss within their Advanced Gas-Cooled Reactor (AGR) nuclear power stations, in order to support their routine safety cases and lifetime extension assessments.

To collate and process the large amounts of data that are required involves significant financial and manpower resources. The number of predictions our client needed to ensure the safe running of their power stations would not be possible given the level of resources available. Frazer-Nash was therefore asked to propose a solution.

### OUR SOLUTION

Our first priority was to establish a structured framework that would set standard procedures for the various stages of data production and collation. These included:

- ▶ the consistent naming of data,
- ▶ introducing reusable techniques, and
- ▶ developing analysis codes in computational algorithms which (*with just a few tweaks to the algorithms*) could be applied to more than one station.

The result of the changes above were that our clients' workforce no longer needed to manually copy and paste data from file to file, this process is being undertaken by reusable algorithms, decreasing the manpower needed and reducing the margin for human error.

We then used a combination of software packages including MATLAB and Excel, to automate the production of final analysis reports into clear, user-friendly charts (see right).

### BENEFITS

Introducing this framework for improved operational efficiency, our clients have saved considerable manpower time and financial resources, whilst reducing the opportunities for human error by processing the calculations automatically.

Instead of producing supporting references for one safety case or lifetime extension assessment per year, our clients are now able to produce multiple reports for several station pairs per year at a significantly reduced cost. In addition, our clients are also able to provide stronger evidence to the Nuclear Installation Inspectorate in support of the continued running of their AGR nuclear power stations.

#### Client

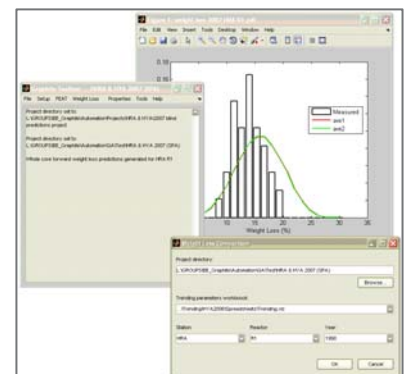
British Energy Generation Ltd

#### Business need

Development of software to reduce resources needed to collect data needed for safety cases and lifetime extension assessments

#### Why Frazer-Nash?

Frazer-Nash has extensive experience in developing bespoke software solutions to facilitate a change in business model.



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