

## **New hydrodynamic facility for Aldermaston**

The recruiting page of the Aldermaston website is showing 2 vacancies for key workers in a new hydrodynamic facility called Hydrus.

### **(1) Facility Operations Manager Designate**

To ensure that the new Hydrodynamics Facility (Hydrus) is commissioned safely into its operational phase. The post will be part of the Hydrus project to ensure the facility is commissioned into operation. After commissioning the post holder will become the Facility Operations Manager responsible for the effective, efficient and safe provision of facility infrastructure, diagnostics, pulse power operations and hydro fielding support services & resources.

[https://careers.awe.co.uk/wd/plsql/wd\\_pds?p\\_web\\_page\\_id=42438](https://careers.awe.co.uk/wd/plsql/wd_pds?p_web_page_id=42438)

### **(2) Facility Engineer (Hydrus)**

To provide engineering support to the new Hydrodynamics Facility (Hydrus) to prepare it for operations. The post will be part of the Hydrus project to ensure that the facility is commissioned into operation. After commissioning the post holder take up a key Facility Engineering role within the new Hydrodynamics Facility.

[https://careers.awe.co.uk/wd/plsql/wd\\_pds?p\\_web\\_page\\_id=42437](https://careers.awe.co.uk/wd/plsql/wd_pds?p_web_page_id=42437)

Hydrodynamic experiments involve detonating dummy nuclear weapons with the plutonium core substituted with another metal. They are critical to determining the performance of the primary of a nuclear weapon.

On 29 August the unclassified summary of a key report on the US Reliable Replacement Warhead by the JASON Defence Advisory Group was published. It says that additional experiments and analysis is needed for the new weapon, now designated WR1.

[http://www.armscontrol.wonk/file\\_download/92/RRW](http://www.armscontrol.wonk/file_download/92/RRW)

The JASON report highlights the need for peer review –

“Peer review for RRW certification must play a larger role than provided for by current NSA Guidelines or envisaged in the LLNL plans.”

Peer review primarily involves the two US laboratories. In the case of WR1 the lead laboratory is Lawrence Livermore. Los Alamos will double check the experiments. However the JASON’s report also says:

“the peer review team should be broadly constituted”

The report also pointed out that there would be a need for –

“additional hydrodynamic and other (non-nuclear explosive) experiments beyond those indicated in the certification plan”.

Stephen White, the group leader for hydrodynamic sciences at Aldermaston said in the 3 August issue of Physics World:

“There is also an ongoing peer-review process with our colleagues in the US weapons laboratories that allows the exchange of data, ideas and staff under the auspices of the 1958 US/UK Mutual Defence Agreement”

<http://physicsworld.com/cws/article/print/30688>

This suggests that the new hydrodynamic facility is likely to play a role, not only in the new British High Surety Warhead project, but also in support of the US Reliable Replacement Warhead programme.

The name of the new facility is interesting. The expected name would be Hydra. This is a monster in Greek mythology with many heads. The new hydrodynamic facility will have 4 or 5 axis whereas the current building has two. Hydrus is another figure in Greek mythology – a sea monster which eats its victim from the inside out. But perhaps this is more apt – as it describes the effect which this facility will have on the MoD budget.

Nick Harvey asked Des Browne a series of questions on hydrodynamics facilities last year. (Hansard 6 June 2006) The Defence Minister said that the number of scientists working on hydrodynamics at Aldermaston would increase from 70 to 95 between 2006 and 2009. With regard to a new hydrodynamics facility he said:

“A number of options are under consideration. Mature costings are not available.”

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