

TS1 Project with-beam commissioning

On 4th November 2022, neutrons were produced on ISIS' target station 1 (TS1) for the first time since a long shutdown began on 21st June 2021 to enable the planned work for the TS1 project [1]. Since that date in November scientists, engineers and technicians been working hard to return TS1 to a fully operational state and enable the delivery of science again.

Relatively quickly after receiving beam, it was noted that the temperature of the front target plate was elevated compared to predictions and compared to the other plate temperatures [2]. While investigating this potential issue, the decision was taken to limit beam power on target to $\frac{1}{4}$ of the maximum (by reducing the repetition rate). In the meantime, work continued on commissioning the cryogenic moderator systems.

Several challenges were also encountered during the commissioning of the cryogenic moderator systems, from issues with helium compressors, to moderator leaks.

This paper will discuss these challenges, the approach employed to diagnose them and actions taken to rectify them.

References:

[1] ISIS TS1 Project summary –S. Gallimore et al 2018 J. Phys.: Conf. Ser. 1021 012053 DOI 10.1088/1742-6596/1021/1/012053

[2] Simulated and Measured Performance of ISIS TS1 Project Target –D.Wilcox ICANSXXIV 2023

Primary author: GALLIMORE, Stephen (UKRI - STFC)

Presenter: GALLIMORE, Stephen (UKRI - STFC)

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