

1	TITLE
1.1	Procedure for the approval of the MICE Step IV experiment to move to the experimental operation stage, specifically for superconducting magnet operating and commissioning, This procedure excludes <i>all</i> operational and constructional aspects of the liquid hydrogen delivery system.
2	SCOPE
2.1.1	This document describes the procedure that must be followed for gaining approval to:
2.1.2	Operate experimentally for the first time
2.1.3	Operate experimentally after a change of configuration of the experiment
2.1.4	Operate experimentally after a change to safety-related hardware, software or procedure
3	RESPONSIBILITIES
3.1	The Group Leader in Matters of Safety (GLIMOS) , will be responsible for implementing the approval procedure once it has been initiated by the MICE Operations Co-ordinator .
4	EQUIPMENT DESCRIPTION
4.1	<p>The MICE Step IV experiment is described as <i>all of the equipment</i> bounded by building R5.2 at RAL; rack rooms one and two, the liquid hydrogen control room, the local control room, the entire R5.2 exterior roof installation and the hydrogen vent system on the exterior of the South wall of R5.2. The equipment includes all aspects of experimental apparatus as well as all items of stairways, galleries, safety and interlock equipment, shielding and means of access.</p> <p>The radiation hazard in R5.2 and the target operating regime and all related control measures are unchanged from existing approvals that have been granted already in accordance with IRR99. This includes all aspects of fixed and mobile shielding, monitoring and other precautions.</p>
5	PROCEDURE
5.1	The GLIMOS shall initiate the approval procedure by organising a briefing for members of a preliminary tour party. The briefing shall describe the purpose of the MICE Step IV experiment, its layout, operation and maintenance of installed equipment. It should also reference any relevant method statements and risk assessments. The briefing shall also define the sign-off requirements for operation.
5.2	The GLIMOS shall ensure that a preliminary safety tour is arranged. The preliminary safety tour party will comprise: MICE Project Manager; MICE Operations Co-ordinator; GLIMOS; Experimental Hall Manager; ISIS Facility Safety Officer; ISIS Operations Group Leader; Head of Health Physics and specialists co-opted where necessary

5.3	The preliminary safety tour will:
5.3.1	- confirm the use for which the experiment is to be approved
5.3.2	- inspect the experiment (which need not be complete) for residual hazards
5.3.3	- review draft risk assessments and local procedures
5.3.4	- identify equipment that has to meet statutory requirements, for example, pressure systems, PUWER/LOLA equipment and local exhaust ventilation
5.3.5	- generate and agree an action plan for the above before the final safety tour
5.3.6	<p>On successful completion of the preliminary safety tour, GLIMOS shall ensure that the RPS, RPA, MICE Operations Co-ordinator and Head of Heath Physics meet to agree radiation safety protocols (including criteria for shielding performance) and to sign off the local rules.</p> <p>Also on completion of the preliminary safety tour, the GLIMOS shall ensure that the MICE Operations Co-ordinator and ISIS Accelerator Division Head meet to agree the process for measuring the magnetic field conditions around the experiment</p>
5.4	The GLIMOS shall ensure that the action plan is communicated to all interested parties, including the members of the final safety tour.
5.5	Additional tours may be arranged if the preliminary safety tour party deems it necessary.
5.6	On completion of the actions stated in the action plan, the final safety tour shall be undertaken. The final safety tour party shall comprise: ISIS Head Of Experimental Operations Division, MICE Operations Co-ordinator, GLIMOS, ISIS Accelerator Division Head (or Deputy), Chair of PPD Safety Committee and specialists co-opted as necessary
5.7	The final safety tour will:
5.7.1	- inspect the experiment, <i>which must be complete</i> , as defined in 5.3.1, for residual hazards.
5.7.2	- review risk assessments, local procedures and local rules.
5.7.2	- ensure that adequate service and maintenance manuals have been provided or are being produced
5.7.3	-ensure that all applicable statutory requirements have been fulfilled
5.7.4	- ensure that the action plan, agreed at the preliminary safety tour has been implemented as agreed
5.7.5	- generate an action plan for any minor works required, and a timescale for their implementation
5.7.6	Subject to the satisfactory completion of the final safety tour, the beam shutter may be opened and the experiment run within the terms of its description and a magnetic field measurement be carried out.

5.8	Upon satisfactory completion of the magnetic field measurement, the ISIS Head of Operations & Director of PPD may sign approval for the experiment to be used as agreed at the preliminary safety tour
RELATED DOCUMENTATION	
6.1	<u>Preliminary Safety Tour</u> 6.1.1 Draft Operational risk assessments 6.1.2 Draft local procedures 6.1.3 Draft local rules 6.1.4 ISIS MCR Briefing sheet 6.1.5 Action plan, including actions from technical reviews 6.2 <u>Final Safety Tour</u> 6.2.1 Supporting documentation for PPS and other electrical systems 6.2.2 Operational risk assessments and method statements 6.2.3 Service and maintenance manuals and/or documents 6.2.4 Approved Local rules 6.2.5 List of Competent Persons 6.2.6 Test certificates and statutory written schemes of inspection and declarations of conformity 6.2.7 Completed action plan from the preliminary safety tour, including actions from technical reviews 6.2.8 Sign off sheet(s)

SIGN-OFF SHEET for Magnet Commissioning and running at MICE Step IV

Task	Ref	Resp. person	Signature	Date
An experiment briefing has been given to the preliminary tour party		MICE Operations Co-ordinator S.Boyd		
Key safety-related systems have been identified and maintenance schedules exist. PUWER/LOLA equipment and pressure systems have been entered onto a statutory register		GLIMOS/Hall Manager J.Govans/ A.Nichols		
The PPS and other electrical safety installations are operational, and have been tested and documented		Electrical engineering Group Leader S Griffiths		
Certificates of conformity, test and calibration certificates in place for principal items of electrical equipment, eg, magnet power supplies		Electrical engineering Group Leader S Griffiths		
EU Declarations of conformity are in place for the four magnet vessels and associated PED systems		MICE Project Manager C.Whyte		
A scheduled functional PPS check has been completed and documented		MICE Operations Co-ordinator S.Boyd		
Shielding, safety barriers, notices and competent person lists are in position		Hall Manager J.Govans		
Local rules have been approved and are displayed at the experiment		GLIMOS A.Nichols		
A review and revision if necessary of the Operational risk assessments has been completed		GLIMOS A.Nichols		
ISIS crew members have been briefed on the operation of the experiment		MICE Operations Co-ordinator S.Boyd		
Risk assessments for any <i>specific</i> subsystems have been completed, ie magnet and cryo-operations		GLIMOS A.Nichols		
Local operating procedures for all <i>specific</i> subsystems have been written		MICE Operations Co-ordinator S.Boyd		
Certificate of Conformance for ODH installation is complete		Hall Manager J.Govans		
Ferro-magnetic sweep of R5.2 complete		Hall Manager J.Govans		
Actions from PPS Review completed		S.Wakefield		
Actions from Magnetic Field Review completed		M.Hughes		

A Formal safety tour has been completed satisfactorily and any resultant actions have been carried out.

Signed.....(Head PPD Safety Committee. **M.Van Grinten**) Date.....

I confirm that the MICE experiment will be operated by competent persons in accordance with the risk assessments and operational procedures

Signed.....(MICE Operations Co-ordinator **S.Boyd**) Date.....

I confirm that the MICE experiment will be maintained by competent persons in accordance with the risk assessments and method statements.

Signed..... (MICE Spokesman **K.Long**) Date.....

The MICE experiment may be handed over by the Engineering Team for superconducting magnet commissioning and running

Signed.....(Head PPD Safety Committee. **M.Van Grinten**) Date.....

Signed.....(Head of ISIS Operations **Z.Bowden**) Date.....

Signed.....(Director of PPD **D.Wark**) Date.....