



SOP 15

Pressure Systems

Safety Rules& Procedures

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1. Introduction

1.1 NHS Fife's Estates staff and external contractors carry out repairs, maintenance, refurbishment or installation of plant and equipment involving dealing with Pressure Systems. As a user and owner of pressure systems, the Board has to demonstrate knowledge of safe operating limits, principally pressure and temperature, of their pressure systems and that the systems are safe under these conditions. The Board needs to ensure that a suitable Written Scheme of Examination is in place before the system is operated. The system must be actually examined in accordance with the Written Scheme of Examination.

1.2 The main regulations covering pressure equipment and systems are the Pressure Equipment Regulations 1999 and the Pressure Systems Safety Regulations (PSSR) 2000.

1.3 Examples of pressure systems and equipment are:

- boilers and steam heating systems;
- pressurised process plant and piping;
- compressed air systems, both fixed and portable;
- autoclaves and retorts;
- heat exchangers and refrigeration plant;
- valves, steam traps and filters;
- pipework and hoses;
- pressure gauges and level indicators;
- pressure raising equipment;
- pathology laboratory gas systems(PLGS);
- medical gas pipeline systems.

1.4 Annex B comprises a flow chart (decision tree) that will assist users in deciding if they have a pressure vessel and who is responsible for its inspection and maintenance.

Note: This guidance should be read in conjunction with Scottish Health Technical Memorandum (SHTM) 08-08: 'Pressure Systems – procedures and guidance' which sets out implications of the PSSR 2000.

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2. Purpose of this Procedure

2.1 This procedure and the supporting SHTM 08-08 guidance will ensure, as far as is reasonably practicable, that all pressure systems provided are safe. NHS Fife will ensure that the design, construction, repair and modification of pressure systems will be managed in order to prevent danger. Relevant information will be made available and retained for record purposes as required by the Pressure Systems Safety Regulations 2000.

Safe Operating Procedures Steam Boilers

2.2 To ensure that competent staff are in place to ensure that boilers can be operated safely, within HSE Document indg 436 'Safe Management of Industrial Steam and Hot Water Boilers' there is a decision flow chart (Annex D) of this document which determines whether the right people are in place. This flow chart should be used to determine compliance

2.3 There must be sufficient documented evidence in place to ensure that boilers can be operated safely. Within HSE Document indg 436 'Safe Management of Industrial Steam and Hot Water Boilers' there is a decision flow chart at Annex E of this document which determines whether there is sufficient evidence, instructions, records and processes in place. This flow chart should be used to determine compliance.

Permit to Work – General Guidance

2.4 NHS Fife has a statutory duty, under s.2 of the Health & Safety at Work Act 1974, to ensure that a safe system of work exists. For certain high-risk activities, this may include setting up a permit to work (PTW) system. This is a formal written system used to control certain types of work that are potentially high-risk activities, which need a higher level of control than a basic safe system of work or method statement. PTWs are intended to:

- Protect workers and others from serious injury in potentially hazardous situations.
- Ensure that hazardous situations are not created.
- Achieve compliance with the law.

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Safe System of Work

2.5 NHS Fife have developed, in conjunction with relevant people, i.e. Health & Safety Dept, Pressure systems Authorising Engineer and SHTM guidance, a safe system of work which must be followed for work on all pressure systems.

2.6 These documents include:

- Isolation Risk Assessment
- Task Risk Assessment
- Safety Programme
- Permit to Work
- Standing Instruction

2.7 It is the responsibility of the Duty Authorised Person (Pressure Systems) to ensure compliance with the Safe System of Work.

System Compliance with PSSR

2.8 NHS Fife recognises that due to the nature and age of some of the pressure systems contained within their premises, they will not fully satisfy the requirements of PSSR in terms with achieving double block and bleed for isolation. The following Permit to Work guidance and associated forms (Annex F) have been developed to allow safe isolation and work on the system.

2.9 It is essential that all pressure systems which do not fully comply with the requirements are appropriately scored on the NHS Fife risk register system and appropriate arrangements are put in place to allow for double valve isolation at minimum. Planning will therefore be essential to highlight areas of noncompliance with a view to upgrade.

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3. Definitions

3.1 The following definitions apply to these procedures.

Term	Definition
Pipework	A pipe or system of pipes together with associated valves, pumps, compressors and other pressure containing components including hoses or bellows but does not mean a pipeline or any protective device.
Pipeline	A pipe or systems of pipes used for the conveyance of relevant fluid across the boundaries of premises together with any apparatus for inducing or facilitating the flow of the relevant fluid through, or through part of, the pipe or system, and any valves, valve chambers, pumps, compressors and similar works which are annexed to, or incorporated in the course of the pipe or system.
Relevant fluid	Steam at any pressure, any fluid or mixture of fluids which are at a pressure greater than 0.5 bar above atmospheric pressure and which fluid or mixture of fluids is: • A gas • A liquid which would have a vapour pressure greater than 0.5 bar above atmospheric pressure when in equilibrium with its vapour at either the actual temperature or liquid at 17.5°C • A gas dissolved under pressure in a solvent contained in a porous substance at ambient temperature and which could be released from the solvent without the application of heat (e.g. acetylene)
Safe operating limits	The limits beyond which the system should not be taken. They are not the limits beyond which system failure will occur.
Safe System of Work	Means a formal documented procedure intended, when followed, to enable an activity or process to be completed safely.
Permit to Work (PTW)	A Permit to Work is a formal written authority (issued by a suitably authorised person) to closely control an activity or process, for which it has been determined that a high level of residual risk remains, following a risk assessment and the formulation of a safe system of work or a method statement. It is an extension to a safe system of work and not a replacement for it; neither is a PTW a guarantee of absolute safety.

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Maintenance

3.2 The purpose of maintenance under these procedures is to ensure the safe operation and condition of the system. The actual process of carrying out the maintenance tasks will be defined in the Estates operation procedures.

3.3 The risks associated with maintenance need to be assessed to comply with the requirements of the Management of Health and Safety at Work Regulations 1999 and the appropriate precautions taken. The need for maintenance should not be confused with the requirement for examinations under the written scheme. These are two separate issues although problems identified during an examination under the written scheme may require corrective maintenance.

Note: The type and frequency of maintenance for a system should be assessed and a suitable maintenance programme planned.

Written Scheme of Examination

3.4 In the context of PSSR 2000 the term “examination” relates solely to examinations carried out under the Written Scheme of examination comprising ones conducted to assess the condition of those parts of the system which may give rise to danger (as defined) in the event of an uncontrolled release of stored energy. This Written Scheme is drawn up by the NHS Board’s insurers and issued to the Estates department.

3.5 Responsibility under PSSR 2000 can be summarised as follows:

- Ensuring that the scope of the scheme is appropriate, confirming which parts of the system are covered;
- The Competent Person specifies the nature and frequency of examinations and any special measures needed to prepare the system for safe examination.

3.6 Before a pressure system can be operated the NHS Board must ensure that a written scheme of examination has been prepared. This should be drawn up by a Competent Person or, if by someone other than a Competent Person, certified as suitable by a Competent Person.

Action in Case of Imminent Danger

3.7 This will apply only, whilst the Competent Person is carrying out the examination under the Written Scheme, they find a serious defect requiring immediate attention where there is a risk of imminent failure if repairs or modifications to the operating of the system are not made.

3.8 The Competent Person must supply a separate form notifying the owner/user of the defects. The form is not part of the report so the report must be completed, given to the Owner/User and sent to the relevant enforcing authority.

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3.9 The Owner/User of that pressure system (or identified part of) must ensure it is not operated until repairs and/or modifications have been carried out to the satisfaction of the Competent Person.

Note: A comprehensive list of the information to be included in the written scheme of examination is set out in SHTM 08-08, paragraphs 2.4 – 2.10 refer.

Marking of Pressure Vessels

3.10 Every pressure vessel identified in the written scheme of examination shall have

- the manufacturer's name;
- a serial number to identify the vessel;
- the date of manufacture;
- the standard to which the vessel was built;
- the maximum design pressure of the vessel;
- the minimum design pressure of the vessel where it is other than atmosphere;
- the design temperature.

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4. Operational Appointments

Definitions of Appointments

4.1 Key individuals will be appointed, as mandated by these Procedures to have specific responsibilities for the management and/or carrying out of work on Pressure Systems as summarised below:

Chief Executive / Executive Manager has the ultimate management responsibility for the Pressure Systems operating within the NHS Board sites.

Authorising Engineer (Pressure Systems) (AE (PS)) –as with Authorising Engineers (AEs) for other disciplines - should be independent of the NHS Board.

The AE will be formally qualified (e.g. CEng, IEng or holder of HND, be familiar with the pressure systems and familiar with the NHS Board's Permit-to-Work procedures.

Authorised Person (Pressure Systems) (AP (PS)) - will be appointed by the NHS Board on the recommendation of the Authorising Engineer and be drawn from the estates department.

Skilled Person (SkP) - They are to be qualified by training, knowledge and/or experience to carry out an activity or process with a clear understanding of the hazards, which could arise, and the precautions that will be required.

Person in Charge (PiC) - Means a Skilled Person, who is in receipt of safety paperwork (Permit to Work (PTW) /Standing Instruction (SI)) which authorises them to: physically supervise /carry out the task/activity detailed on that safety paperwork.

Competent Person (Pressure Systems) - Specifically for Pressure Systems this role can be undertaken by:

- The NHS Board's own in-house estates representative.
- An individual person (e.g. a self-employed person);
- An organisation providing independent inspection services (possibly, the Insurance Company's inspector)

who has authority to ensure that repairs and modifications are being carried out to ensure that safe operating limits are not compromised.

A Competent Person should have sufficient knowledge and experience to make recommendations or decisions that will ensure the equipment of process is operated and used safely. Any individual or organisation acting as a Competent Person should have sufficient practical and theoretical knowledge as well as experience of the actual systems

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involved with the ability to access any required specialist services, expertise and effective support either from within the NHS or through arrangements with external bodies

Definitions of Roles and Duties

4.2 The Roles and Duties for the appointees mentioned above are as follows:

4.3 Authorising Engineer (Pressure Systems) -The role and duties of an AE (PS) includes the responsibility for:

- Assessing competency of Authorised Persons (Pressure Systems) (AP(PS)).
- Determining the level of authority given to an AP(PS) in respect to the hazard levels of systems under their control.
- Setting the requirements for and seeking evidence of proper training of Authorised Persons (Pressure Systems) under their control.
- Auditing and monitoring the application of the procedures required by these Safety Rules and Procedures and PSSR 2000 including record keeping and certification as appropriate.
- Compiling reports following of the audit of sites under their control.

4.4 Authorised Person (Pressure Systems) - The role and duties of an AP (PS) includes the responsibility for:

- Reviewing all prospective work on Pressure Systems and determining the appropriate level of control.
- Compiling, issuing, cancelling, and archiving of the appropriate safety paperwork to control works on Pressure Systems.
- Ensuring that a Risk Assessment for the isolation of a Pressure System is prepared prior to the production of a Safety Programme.
- Ensuring that the Safety Programme ensures adequate isolation of a Pressure System prior to the issue of any Permits to Work for that system.
- Overseeing and certifying the isolation of a Pressure System under their control.
- Authorising work on a Pressure System that has been certified isolated by another AP (PS).
- Ensuring that a Risk Assessment and Method Statements (RAMS) for each Task on a Pressure System is prepared to their satisfaction prior to issue of a Permit to Work or a Standing Instruction
- Ensuring that where appropriate suitable RAMS for the Task is produced and available to the Person in Charge
- Assessing Skilled Persons for appointment.

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- Maintaining a Register of Skilled Persons deemed competent to work on the Pressure Systems under the control of the AP(PS).
- Ensuring that any recipient of a Permit to Work or a Standing Instruction is an appointed Skilled Person for the system to be worked on.
- Monitoring, in co-ordination with the Authorised Person, the progress of the task to ensure that the conditions of the PTW are being observed.

4.5 In the event of any doubt in the interpretation or application of these Procedures, the AP(PS) is to ensure the work is made safe until the issue is clarified. If necessary, the advice of the Authorising Engineer / Competent Person should be sought for clarification and resolution.

4.6 Skilled Person (SkP) - The role and duties of an SkP(PS) includes the responsibility for:

- Working in accordance with these Safety Rules and Procedures.
- Taking reasonable care of the health and safety of themselves and of any other person who may be affected by their actions or omissions.
- Only using equipment for which they have been trained and in the manner in which they have been trained.
- If part of a works team, reporting to the Person in Charge any defects found in the tools, plant or equipment to be used in the works.

4.7 A Skilled Person must only work on Pressure Systems for which they have been appointed. Additional/different training requirements exist for work on Boilers and Pressure Systems, Gas Systems, Refrigeration Systems, Medical Gas Pipeline Systems and Dental Air and Vacuum Systems.

4.8 Person in Charge (PiC) - The role and duties of the PiC includes the responsibility for:

- Ensure that they are fully conversant with, and able to ensure compliance with the conditions set out in the PTW and all documentation associated with the task.
- Ensure that all members of their team (if applicable) are capable and adequately trained to carry out the task.
- Ensure that all members of their team (if applicable) are aware of and have been briefed on all aspects of the task including emergency arrangements.
- Ensure that all-necessary safety and emergency equipment is available and is suitable and safe for use prior to the commencement of the task.
- Ensure that adequate emergency arrangements are in place before commencing the task.
- Ensure that any actions required before commencing the task are carried out.

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- Always being present at the site while the task is being carried out.
- Stop work and withdraw all personnel, tools, plant and equipment if for any reason the conditions of the PTW or RAMS statement cannot be met, ensuring that the site has been suitably isolated/made safe.
- In the event of any doubt in the interpretation or application of these Procedures, this should be referred to the AP(PS) whereupon work will be stopped immediately and made safe until the issue is clarified.
- Ensure that “others” directly affected by their team’s activities have been briefed and are subsequently kept informed of any changes to the task.
- Report to the Authorised Person, any accidents, dangerous occurrences or incidents that arise in relation to the task.
- Ensure that only tasks detailed on the PTW are carried out.

4.9 The Duty AP(PS) cannot act in the capacity of PiC by issuing a Permit to Work to themselves.

4.10 The Duty AP(PS) can issue a Permit to Work to another AP(PS) for that site, who then acts in the capacity of a PiC. The second AP(PS) in to carry out no AP duties whilst working in the capacity of PiC.

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5. General Arrangements

General

5.1 Where contractually mandated, compliance with these Safety Rules and Procedures is mandatory for all persons working on, testing or inspecting pressure systems under the control of NHS Fife from their initial specification and design through their installation to their eventual operation. The client or those specifying works must consider the needs of the operators of the systems to be able to isolate items of plant for maintenance and the design must incorporate adequate valves and proving points to accommodate safe isolation of the plant. The design must also consider the needs of the operator for access with sufficient space between plant to allow the maintainer to work safely. Although on site changes are inevitable, any changes made to the original design by the installer are to maintain adequate working areas around plant and preserve the ability for lock off isolation points. The Project Manager in charge of the works is to ensure that any alterations made on site do not affect the application of these rules to the works.

5.2 The AE and APs for the establishment are to be available to provide advice on the application of these rules to any new installations and to be available to review tender drawings for compatibility with the requirements of these Safety Rules and Procedures.

5.3 The Commissioning Engineer for any new works with respect to pressure systems must be fully conversant with the requirements of the Safety Rules and Procedures and take these into consideration when commissioning the plant. The AE and/or APs for the establishment are to be included in both snagging and handover meetings for new works to enable compliance with these rules. As part of the handover procedures, the installer must include an adequate period of training for the Skilled Persons who will be responsible for the maintenance of the plant.

Site Survey

5.4 A Site Survey is to be made to establish which Pressure Systems within an establishment fall under the control of these Safety Rules and Procedures. It is used to establish which systems should be categorised as High Risk and which are Low Risk.

5.5 The survey should confirm:

- The age and condition for each system;
- Usage patterns;
- Working pressures and temperatures for each system;
- Any system deficiencies (e.g. lack of appropriate isolation valves etc.);

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- The presence of required documentation, such as:
 - Written Schemes of Examination
 - Reports of examination under the Written Scheme
 - User Manuals
 - Maintenance Schedules
 - Vales Operating Charts
 - Schematic Diagrams/As Built Drawings

Risk Categorisation

5.6 The following systems are to be categorised as High Risk:

- Steam Systems
- High Temperature Hot Water Systems (>120°C)
- Medium Temperature Hot Water Systems (100°C - 120°C)
- High Pressure Compressed Gas Systems (>10 Bar(g))
- Medical Gas Pipeline Systems (MGPS) excluding Dental Air and Vacuum Systems (DAVS).

5.7 All other pressure systems are to be considered as Low Risk, but the AE may determine that an individual system may present sufficient risk as to require the implementation of these Safety Rules and Procedures.

Demarcation Agreements

5.8 Where elements of Pressure Systems or services are either received from or supplied to a third party, a demarcation agreement must be drawn up setting out the exact point(s) of demarcation, and the responsibilities of all parties to the agreement.

5.9 A drawing marked with the demarcation points must accompany the agreement. As a general rule demarcation points are to be immediately upstream or downstream of valves to aid isolation and provide an easily identified demarcation point.

5.10 The Demarcation Agreements are to be agreed and accepted by the AE. Copies of the agreements are to be filed in the Pressure Systems Document Cabinet.

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6. Management Arrangements

Pressure System Document Cabinet

6.1 For each site or location a Document Cabinet is required to house all the documentation required to support the running of those Pressure Systems under the control of NHS Fife.

6.2 This may be a lockable draw, cabinet or series of cabinets under the control of the AP and is to be secured when unattended.

6.3 Documents held within the Document Cabinet Include:

- The Pressure Systems Document Register (index)
- Working pads, completed pads and stocks of:
 - Isolation Risk Assessments
 - Safety Programmes
 - Permits to Work
 - Standing Instructions
 - Pressure Systems Operating Records
- The result of the AE's Site Survey detailing the Risk Categorisation of the Systems and any additional systems required to be managed under these Safety Rules and Procedures
- Completed and current Works Files containing all relevant safety paperwork
- Any other relevant documents, for the running of the Pressure Systems including:
 - Written Schemes of Examination
 - Reports of examination under the Written Scheme
 - Operational Restrictions
 - Site Drawings (Schematics, Valve Charts etc.)
 - Test certificates
- Skilled Persons Register and any supporting documentation
- A register of AEs, and APs appointed for the Site or Establishment
- AE's Audit Reports

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Pressure System Operating Record

6.4 For each site or location a Pressure System Operating Record (PSOR) is required.

6.6 The AE may decide that there should be separate PSORs for distinctly separate Pressure System with a single site.

6.7 The PSOR is to be in the form of a bound book with the pages sequentially number. The book front is to be clearly and indelibly marked with the site/system to which it refers along with the date of the first entry and when complete the date of the last entry.

6.8 Entries in the PSOR include:

- Self-operation of any safety devices
- Handover of responsibility between AP(PS)s
- The isolation of any Pressure System (or part of a system) with reference to the Safety Programme under which it was isolated.
- The issue and cancellation of each Permit to Work, Standing Instruction
- The loss of a Permit to Work, Standing Instruction
- The withdrawal of a Permit to Work or Standing Instruction including the reason for withdrawal
- The re-instatement of any Pressure System (or part of a system) following the completion of all works and the closure of the Safety Programme
- Details of any reportable disease, injury or dangerous occurrence associated with work on Pressure Systems
- Any change to the safe operating limits of a Pressure System
- Any change of the relevant fluid in a Pressure System
- The receipt and termination of a relevant Operational Restriction
- Any examination or remedial action resulting from an Operational Restriction

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Keys and Key Security

6.9 To ensure the safe and continued isolation of a Pressure System (or part thereof) being worked on, a LOTO (Lock Out Tag Out) system is to be implemented using Safety Signs and Safety Locks.

6.10 A Safety Lock is a padlock (normally red in colour), having only one key. The padlock and it's key being marked with the same unique number.

6.11 Safety Locks can be used for:

- Locking isolation valves in the open or closed position as appropriate
- Isolate fuel and electricity supplies
- Lock by-pass valves in safe positions
- Lock open drainage points and vents as appropriate.

6.12 On completion of an isolation under a Safety Programme the keys to any Safety Locks used must be secured in a Safety Key Box. This could be a 'Standard' key box in the form of a box with two separate integral locks with unique keys (AP and PiC) or a Lockout Box with the facility to secure with multiple padlocks.

6.13 For standard key boxes the AP(PS) is to retain one key and hand the second key to PiC on issue of a Permit to Work.

6.14 For Lockout Boxes the AP(PS) is to apply a Safety Lock and retain the key and for each Permit to Work issued for work within this area of isolation (as covered by the associated Safety Programme), each PiC is to attach a Safety Lock and retain it's key.

6.15 Where work involves isolations to be carried out by APs from different disciplines (i.e. Pressure Systems and Electrical), then the AP for that discipline is to control that aspect of the work using their own separate Safety Locks, Keys and Boxes.

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7. Operational Procedures

Determining the Level of Control

7.1 The level of control required for works on Pressure Systems will take the form of either:

- Standing Instruction
- Permit to Work

7.2 Guidance on the requirements of Standing Instructions and Permits to Work is given in the following Sections.

Isolation Methodology

7.3 The isolation methodology to be used is based on the Health and Safety Executive publication 'HSG 253 The Safe Isolation of Plant and Equipment'.

7.4 the basic principles of HSG 253 are:

- Avoid risk whenever possible
- Carry out risk assessment to evaluate risks that cannot be avoided
- Take action to reduce risk as low as reasonably possible (ALARP)
- Reduce risks at source if possible

7.5 The level of isolation required for each task is to be based on the risk exhibited by the system to be isolated.

7.6 The following methods of isolation have been identified for use when work is to take place on Pressure Systems controlled by NHS Fife:

- Method 1 – Full System Depressurisation
- Method 2 – Double Block and Bleed
- Method 3 – Proved Double Block
- Method 4 – Single Block, Bleed and Blank
- Method 5 – Single Block and Bleed

7.7 All method of isolation can fail and to be effective they should go through a proving process, which for Methods 2 through 5 is detailed in Annex A to theses Safety Rules and Procedures.

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7.8 To ensure an isolation remains effective any isolating valves must be identified and secured in the appropriate position.

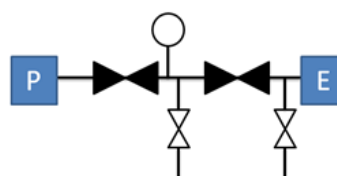
7.9 Valves should not be used as the final means of isolation, other than for the shortest possible time. Open pipework, vents and drains should be plugged, capped, or blanked whenever reasonably practicable.

7.10 Method 1 – Full System Depressurisation;

- This is where the entire system to be worked on is shut down and pressure is relieved from every single part of it. It is the approved method of risk management, for all types of Pressure Systems, as it eliminates the risk of stored energy at source but is rarely practicable in the NHS environment.

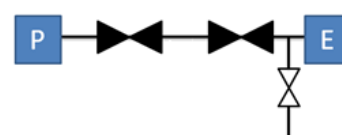
7.11 Method 2 – Double Block and Bleed

- This is where between the Equipment to be worked on (E) and the live Pressure System (P) there is;
 - A drain/vent point at the Equipment
 - An initial isolation valve
 - A secondary isolation valve
 - A drain/vent point between initial and secondary isolation valves



7.12 Method 3 – Proved Double Block

- This is where between the Equipment to be worked on (E) and the live Pressure System (P) there is;
 - A drain/vent point at the Equipment
 - An initial isolation valve
 - A secondary isolation valve
 - No drain/vent point between initial and secondary isolation valves



Note: The term 'Proved' is used to distinguish this form of isolation from 'Non-proved' Double Valve isolation shown in HSG 253 as this method goes through a proving process, which is detailed in Annex A of these Safety Rules and Procedures.

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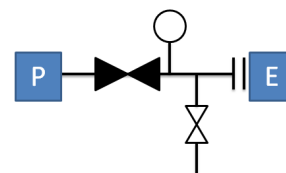
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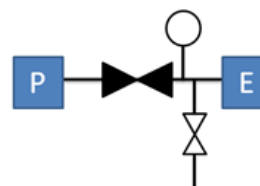
7.13 Method 4 – Single Block, Bleed and Blank

- This is where between the Equipment to be worked on (E) and the live Pressure System (P) there is;
 - A drain/vent point at the Equipment
 - An initial isolation valve
 - Once drained/vented the Equipment is physically disconnected and blanked off from the Pressure System



7.14 Method 5 – Single Block and Bleed

- This is where between the Equipment to be worked on (E) and the live Pressure System (P) there is;
 - A drain/vent point at the Equipment
 - An initial isolation valve



Final Isolation Matrix

7.15 Whenever it is not practical to implement Method 1 Full System Depressurisation, on High-Risk Systems, and subject to risk assessment, the Final Isolation Matrix should be referred to, to give guidance on the level of isolation required.

Type of System	Method 2	Method 3	Method 4	Method 5
Steam	★	★	★	AE
HTHW	★	★	★	AE
MTHW	★	★	★	AE
Compressed Gasses >10 bar(g)	★ ★	★ ★	★	AE
Compressed Gasses ≤ 10 bar(g)	★ ★	★ ★	★	★

- ★★ = Approved Method
- ★ = Acceptable Method

AE = Requires AE approval before this method can be implemented. Please note that to implement Method 4 initially Method 5 must be used, therefore AE's approval will be required except with Compressed Gasses ≤ 10 bar(g).

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Steam Trap Isolation

7.16 Due to the design of Steam Traps and their frequent need of servicing a special isolation procedure has been developed, to be known as the 'temperature Isolation Method' and is at Annex A of these Safety Rules and Procedures.

Alternate Methods of Isolation

7.17 Any alternate method of isolation, other than those stated above, may be used providing it has been properly assessed and approval granted for its use by the AE.

Electrical Isolation

7.18 Electrical isolation, for mechanical maintenance, of a Pressure System can be done by the AP(PS), without reference to the AP Electrical providing that it is by means of a lockable switch or circuit breaker, to which the AP(PS) can attach a Safety Lock and Safety Sign.

7.19 If the electrical isolation requires the removal of fuses, exposure of live terminals or the disconnection of cables, then this is to be done under the control of the AP Electrical.

Fuel Oil Isolation

7.20 The AP(PS) can isolate can authorise work on Class III fuel oil supply to equipment within the confines of the boiler house or plantroom.

Natural Gas/LPG Isolation

7.21 The AP(PS) may shut the gas isolation valve, to isolate Natural Gas or LPG supply to a boiler or other equipment. This is to isolate that equipment from a possible source of energy, to allow for mechanical maintenance to take place.

7.22 The disconnection of Natural Gas or LPG must be undertaken by an approved registered gas fitter and carried out in accordance with the current gas safety regulations.

7.23 Where any part of the system has been physically disconnected, a gas soundness certificate must be issued prior to restarting the system.

7.24 The re-instatement of Natural Gas or LPG whether isolated or disconnected must be undertaken by an approved registered gas fitter and carried out in accordance with the current gas safety regulations.

Risk Assessment

7.25 Prior to any work on a Pressure System 'suitable' Risk Assessments must be produced and will as a minimum take the forms of:

- A Task Risk Assessment
- An Isolation Risk Assessment

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Task Risk Assessment

7.26 The Task Risk Assessment is produced by the individual or organisation actually carrying out the works task. It forms part of the Risk Assessment Method Statement (RAMS) for the task and is to cover all the hazards associated with carrying out the work activity.

7.27 It should be submitted to the AP(PS) with sufficient time for them to review it, to ensure it is compatible with the AP's scheme of works for the task.

7.28 If the AP(PS) does not think the Task Risk Assessment is compatible with the intended scheme of works, then they are not to issue a Permit to Work for the task.

7.29 The Person in Charge (PiC) for the task is to have a copy of the RAMS with them whilst carrying out/supervising the task.

Isolation Risk Assessment

7.30 The Isolation Risk Assessment is produced by the AP(PS) to address the hazards exhibited by the system to be worked on. It should be in a format similar to the model form at Annex D.

7.31 It is used to confirm which method(s) of isolation is/are to be applied to ensure safety from system hazards at the Point of Work (POW). How the identified method(s) of isolation is/are apply is them detailed in the Safety Programme.

7.32 It should consider the control measures needed to protect three different groups of individuals from the hazards of the system. Those three groups being:

- Persons to be working on the system
 - Isolate, Cool, Vent and Drain
- Persons carrying out the isolation
 - Appropriate PPE
- Other persons adjacent to the area of isolation
 - Restrict Access

7.33 Once the task is complete, the Isolation Risk Assessment is to be retained in the Works File for the task along with all other Safety Paperwork and filed in the Pressure System Document Cabinet for a minimum of three years from date of completion.

Safety Programme

7.34 The Safety Programme is to be produced by the AP(PS) once they have identified the method(s) of isolation to be used, in the Isolation Risk Assessment. It details the steps required to make the system (or part identified) safe to be worked on. The Safety Programme should be in a format similar to the model form at Annex D.

7.35 The Safety Programme differs from the Method Statement for the task, in that it is only concerned with the steps necessary to make it safe for the work to proceed.

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7.36 The Estates Department is to inform the Client of any loss of services and obtain their permission for the work to proceed.

7.37 Once the steps have been implemented and the Statement of Isolation Box on the front page of the Safety Programme has been signed, the system is deemed safe to work on and multiple Permits can be raised within the area of isolation.

7.38 Each page of the Safety Programme should have the same unique number to identify it and also state the Site to which it refers and reference the associated Isolation Risk Assessment.

7.39 The front page of the Safety Programme is to state:

- The type of system to be isolated
- The location of the isolated system
- The equipment to be worked on, with reference to the innermost isolation valves
- Any isolation of electrical and/or fuel supplies

7.40 Once the sequence of operations has been written up and ready to be implemented the AP(PS) is to sign and date the front page and subsequent pages of the Safety Programme. If deemed necessary, at this point, the Safety Programme is to be countersigned by a second AP or the AE.

7.41 The second page of the Safety Programme has space for a hand drawn schematic diagram of the area of isolation. This schematic diagram is to clearly identify:

- The Equipment(s) to be worked on (identified as the Point(s) of Work (POW))
- Points of Isolation
- Points of draining, venting or depressurisation

7.42 The schematic diagram is to include a legend giving information on:

- Any abbreviations and/or symbols used
- A list of any electrical and/or fuel isolations

7.43 It is permissible to attach a printed drawing in place of a hand drawn schematic diagram. In which case as well as the above information, this drawing is to include a title block stating:

- That Safety Program's unique number
- Name of the AP Pressure System compiling the Safety Programme
- Signature of the AP Pressure System compiling the Safety Programme
- Date

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7.44 The next page(s) of the Safety Programme is/are to detail the Sequence of Operations necessary to make it safe for the work to proceed. The columns of the Sequence of Operation are as follows:

- Column (a) – Serial number of each entry
 - Sequentially numbered
- Column (b) – Location and Identity of Valve or Component Part
 - Where this serial is to take place
 - The item(s) involved in this serial
- Column (c) – Operation and Reason
 - What is happening to this item
 - Why this operation is taking place
- Column (d) – Items Required
 - Any item required to support this operation (i.e. Safety Locks/Safety Signs)
- Column (e) – Date and Time of Operation
 - The AP(PS) is to leave this column blank when compiling the Safety Programme.

7.45 As each serial is written up it is to be underlined and when the whole Sequence of operation is written up the pages of the Safety Programme are signed and it is placed in the Works File and secured in the Pressure System Document Cabinet (PSDC) to await implementation.

7.46 When the Isolation is to take place the AP(PS) is take the Safety Programme from the PSDC to the Point of Work and is to annotate the date and time as each serial takes place.

7.47 Once the isolation is complete the AP(PS) is to sign the Statement of Isolation on the front page of the Safety Programme and it is to be posted in a prominent position in the AP(PS)'s office, to alert people that an isolation is in effect.

7.48 The isolation of a Pressure System is to be recorded in the Pressure System Operating Record with reference to the Safety Programme under which it was isolated.

7.49 As the AP(PS) issues each Permit to Work (PTW) against the Safety Programme they are to ensure that the PiC enters the permit number, issue date, their name and signature on the final page of the Safety Programme.

7.50 When work is complete and the PTW returned, the PiC is to complete the entry on the final page of the Safety Programme.

7.51 If for any reason the intended work cannot be completed the PiC is to complete the entry on the final page of the Safety Programme and then the AP(PS) is to annotate this entry to highlight that the work is not complete.

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7.52 Once all works are complete and all permits returned, the AP(PS) is to line out any remaining rows on the final page of the Safety Programme. The AP(PS) is then to visually inspect the system for integrity and if satisfied is to cancel the Safety Programme.

7.53 The reinstatement of a Pressure System is to be recorded in the Pressure System Operating Record.

7.54 Once the task is complete, the Safety Programme is to be retained in the Works File for the task along with all other Safety Paperwork and filed in the Pressure System Document Cabinet for a minimum of three years from date of completion.

Permit to Work

7.55 Permit to Work (PTW) is required where the integrity of a system is to be breached and the system is classified as High Risk.

7.56 A Permit to Work is not required for routine operational tasks undertaken without the use of tools e.g. water treatment or draining receivers.

7.55 Work on Low Risk Systems where a PTW is not required is to be controlled by the use of a Standing Instruction.

7.57 A PTW (Pressure Systems) is to have a format similar to the model form detailed in Annex D of these Safety Rules and Procedures.

7.58 Each sheet of a permit is to be identified by the same pre-printed serial number on the original and photocopy, or carbon duplicate from a pad.

7.59 A PTW is to be issued only to Skilled Persons or other APs (an AP cannot issue a permit to himself).

7.60 A Permit to Work (Mechanical) is to state precisely and legibly:

- The Site
- The type of system to be worked on
- The location of the system
- The work to be undertaken
- The serial number of the related Safety Programme
- The serial number of Risk Assessment/Method Statement for the task, supplied by the contractors/organisation intending to carry out the work.
- Where applicable, the serial number of any related PTW (e.g. Confined Spaces or Electrical).

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Issue and Acceptance of a Permit to Work

7.61 A Permit to Work is to be issued only by the Duty AP(PS) at the point of work.

7.62 Before the issue of a PTW the Duty AP(PS) is to demonstrate to the Skilled Person:

- The identity of the Pressure System and the component parts to be worked on
- That the Pressure System or component part has been isolated
- The safety arrangements at the place of work and at points of isolation
- Any special instructions and/or safety measures
- That the point(s) of work is/are de-pressurised, vented and drained, and that it is safe for the work to proceed.

7.63 Before the issue of a PTW the Duty AP(PS) is also to ensure that the Skilled Person is in possession of and understands the RAMS for the task.

7.64 Before accepting the PTW the Skilled Person is to:

- Read the PTW and the Safety Programme
- Understand the extent of the work
- Understand the safety precautions
- Be prepared to undertake the work
- Enter the PTW number on the Safety Programme and sign it.

7.65 The Skilled Person is to fill in their details and sign Part 2 of the PTW to accept the responsibility as the Person in Charge (PiC). The acceptance of a PTW identifies the PiC as personally responsible for supervising or undertaking the defined work.

7.66 The AP(PS) then removes the Original (top copy) of the PTW from the permit book and hands it to the PiC. The PiC retains the original PTW until the task is completed or stopped.

7.67 The PiC is then to either take control of the PiC Key from the Safety Key Box, or is to attach a unique padlock to the multi hasp on the Safety Key Box and take control of the key to that padlock.

7.68 While the work is in progress, the PiC is not permitted to leave the site or to undertake any other work or tests.

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7.69 During any temporary absence of the PiC from the point of work, the work is to be halted. The PiC is to ensure that suitable safety precautions are taken and the AP informed, before leaving the point of work.

7.70 Where a change of PiC is required the PTW is to be closed and a new PTW issued. The reason for closure of the PTW and status of the task is to be recorded on the original PTW and in the PSOR.

Completion and Cancellation of a Permit to Work

7.71 On completion of the work the PiC is to:

- Withdraw all persons, tools, and equipment from the point of work.
- Advise anyone under their control that it is no longer permitted to work on the system.
- Complete and sign the Part 3 of the original PTW.
- Complete and sign the entry in the Safety Programme.
- Return the original PTW to the Duty AP.
- Return the PiC Key or remove the unique padlock from the multi hasp.

7.72 The Duty AP(PS) is to confirm that the work has been completed satisfactorily and the sign Part 4 of the original PTW to cancel it.

7.73 The Duty AP(PS) is then to File the cancelled original PTW along with all the other associated safety paperwork in that task's Work File, which is then stored in the Pressure System Document Cabinet and held for no less than 3 years from the date of completion.

Stopped Works

7.74 If the Duty AP(PS) decides that it is necessary to stop the work, the PTW is to be withdrawn and cancelled.

7.75 The withdrawal is to be noted on the original PTW and the reasons for withdrawal and any actions taken are to be noted in the PSOR.

7.76 A new PTW is required before re-starting work.

7.77 Where the work is stopped, the PTW is to be cancelled. The PiC is to:

- Withdraw all persons and if appropriate all equipment and tools from the place of work
- Advise all persons under their control that they are no longer permitted to work on the system

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- Amend the relevant Section of the original Permit to the effect that the work is incomplete and the point of work has been made safe
- Return the original PTW to the Duty AP
- Return the PiC Key or remove the unique padlock from the multi hasp.

7.78 Where the work is stopped and the PiC has returned the PTW, the Duty AP(PS) is to annotate the Safety Programme to highlight that work is not complete. This serves to prevent removal of the isolations until all associated work is complete and the integrity of the system has been restored.

Loss of a Permit to Work

7.79 If the PiC has lost the original PTW, the loss is to be recorded by the Duty AP in the PSOR. The PiC is to countersign the statements in the PSOR to confirm and acknowledge the loss of the PTW.

7.80 The carbon duplicate from a pad of the PTW is then to be used in place of the original and cancelled and filed in accordance with the above paragraphs.

Standing Instructions

7.79 Standing Instructions are issued by the Duty AP(PS) to Skilled Persons for both one-off and repetitive tasks on pressure systems where a PTW is not appropriate.

7.80 Standing Instructions can be valid for up to 3 years but must be reviewed annually or if there is a change to the system, by the Duty AP(PS). The review being recorded in the PSOR.

7.81 Each Standing Instruction is to include an expiry date.

7.82 A Standing Instruction is to contain the following information:

- Location and type of system to which the instruction refers
- Isolation procedure (if applicable)
- Detail of tasks to be carried out (or reference where detail can be found)
- Special instructions or safety measures applicable
- Name of Skilled Person
- Name of employer
- Validity period of Standing Instruction.

7.83 Standing Instructions must be specific and must contain sufficient detail with respect to the procedure required to be undertaken by the Skilled Person or reference to

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the documentation where this detail can be found, to ensure that the system is safe before commencement of work.

7.84 This may be in the form of an attached procedure detailing the method for isolation and de-pressurisation. There could be several such procedures supporting a Standing Instruction as it may cover more than one item or plant system.

7.85 Standing Instructions are to be supported by Risk Assessments that cover both the isolation procedure (where necessary) and the tasks.

7.86 A Standing Instruction is to have a format similar to the model form in Annex D of these Safety Rules and Procedures. Each sheet of a Standing Instruction is to be identified by the same unique serial number on the original, the photocopy, or carbon duplicate from a pad.

7.87 A Standing Instruction (SI) cannot be transferred from one person to another, however multiple SIs can be issued to separate individuals for the same task, to cover shift work, holidays, absences etc.

Issue and Acceptance of a Standing Instruction

7.88 Having understood the instruction(s) and being prepared to undertake the task(s), the Skilled Person is to sign and accept the Standing Instruction. On signing for acceptance of the instruction a Skilled Person authenticates the instruction as valid and becomes the Person in Charge of the permitted task(s).

7.89 The issue of a Standing Instruction is to be recorded in the PSOR. The original copy of the Standing Instruction is to be issued to the Skilled Person. The duplicate copy is to be retained in the document cabinet.

Completion and Cancellation of a Standing Instruction

7.88 On completion of the tasks outlined in the Standing Instruction or (for repetitive tasks) on reaching the expiry date, the Person in Charge is to return the instruction to the Duty AP(PS) for cancellation.

7.89 The Duty AP is to cancel the Standing Instruction by signing Part 4 and then is to file the cancelled original in the Cancelled SI Folder in the Document Cabinet for a period of no less than 3 years from date of cancellation.

7.90 The cancellation of a Standing Instruction is to be noted in the PSOR.

Loss of a Standing Instruction

7.91 If the PiC has lost the original Standing Instruction the loss is to be recorded by the Duty AP in the PSOR. The PiC is to countersign the statements in the PSOR to confirm and acknowledge the loss of the Standing instruction.

7.80 The carbon duplicate from the Standing Instructions pad is then to be photocopied and the photocopy given to the PiC as a replacement.

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8. Training

8.1 Although the provision of training for staff who use the pressure system is not covered by PSSR 2000 it is covered by the Management of Health and Safety at Work Regulations 1999 and, more explicitly, by Regulation 9 of the Provision and Use of Work Equipment Regulations 1998. Those Regulations place a duty on the employer to ensure that anyone using work equipment, or supervising/managing its use, should have received adequate training for the purposes of health and safety.

8.2 The instructions provided to operators by the owner / user should cover the following:

- all procedures and information needed so that the system can be operated safely;
- any special procedures to be followed in the event of an emergency.

8.3 Information provided by manufacturers or suppliers such as instruction sheets and operating manuals may form part or all of the instructions developed to meet these Regulations. To fulfil this role they should:

- be sufficiently comprehensive;
- cover the particular installation and its safe operation;
- be consistent with the site operating conditions.

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9. Measurement and Review

Measuring performance

9.1 It is essential that the instructions provided within these procedures are monitored and accurately evaluated in order to ensure its continued effectiveness. Monitoring will be undertaken as part of the NHS Board's health and safety audit process.

Review of procedures

9.2 The NHS Board will make arrangements for the Health and Safety department to review these procedures biennially as a minimum or as a result of changes in legislation or best practice.

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10. Records

10.1 The NHS Board's Head of Estates (or equivalent) shall keep the following documentation readily available. (The responsibility for maintaining these systems can be designated to others). The documentation required to be made available includes the following:

- The last report relating to the system made by the Competent Person;
- Any previous reports if they contain information which will materially assist in assessing whether:
 - the system is safe to operate, or
 - any repairs or modifications to the system can be carried out safely;
- Any designer's / manufacturer's / supplier's documents relating to parts of the system included in the written scheme;
- Any documents required to be kept by the Pressure Equipment Regulations 1999;
- The most recent examination report produced by the Competent Person under the written scheme of examination;
- Any agreement or notification relating to postponement of the most recent examination under the written scheme;
- All other reports which contain information relevant to the assessment of matters of safety;
- Permits-to-Work.

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Annex A: Isolation Procedure

A.1 Whenever a need to isolate part of the Pressure System arises; it is the responsibility of the AP(PS) to decide the appropriate method(s) of isolation to be used. It should be noted that when working on a system, pressure may pose a hazard to the Point of Work from more than one direction and each direction may require a different method of isolation.

A.2 the following table is for assisting in how to implement isolations:

Ser.	Action	Remarks
1.	Identify the Point of Work (P.O.W)	Work from the P.O.W. outwards in all directions.
2.	Where can it safely be Vented/Drained?	Are any valves between the P.O.W. and the Point of Venting? If so, lock open.
3.	Shut initial isolation valves. Fit Safety signs and Safety Locks as required.	If necessary, allow area to cool to <43°C
4.	Depressurise and prove initial isolation valves.	Carefully open Point of Venting/Draining and observe: Pressure drop on gauges Flow at Point of Venting/Draining. If flow at Point of Venting/Draining ceases, then valves are holding.
5.	Shut secondary isolation valves. Fit Safety signs and Safety Locks as required.	Shut the next convenient valve on each leg. This may not be the very next valve, think: 'how can I vent/drain between initial and secondary valves on each leg.?' If necessary, lock open any valves between initial and secondary isolations.
6.	Depressurise and prove secondary isolation valves	Prove each leg in turn. Carefully open secondary Point of Venting/Draining or re-open initial isolation valve and observe: Pressure drop on gauges Flow at point of Venting/Draining. If flow at Point of Venting/Draining ceases, then valves are holding. If required, re-shut initial isolation valves to achieve Proved Double Valve isolation and fit Safety Locks.

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Temperature Isolation Method

A.3 This procedure has been developed by NHS Fife for servicing steam traps and other similar devices, where it is not appropriate to use Methods 1 through 5. It can be implemented by the AP(PS) or a Skilled Person holding a relevant Standing Instruction for carrying it out and does not require the issue of a Permit to Work.

A.4 It requires the use of a calibrated infra-red thermometer and the recording of temperatures on a Temperature Isolation Record, which should be in a format similar to the model form at Annex F.

A.5 The procedure is as follows:

- Identify two suitable points of isolation upstream of the point of work.
- Using the calibrated infra-red thermometer take and record reference readings of the pipework either side of the valves and at the Point of Work (0 Minutes).
- Close the valve nearest to the Point of Work (valve A).
- Record temperature readings upstream and downstream of this valve and at the Point of Work at 5 minute intervals.
- A temperature drop of 50% after 10 minutes downstream of the valve, and at the point of work would indicate valve A is holding.
- Close the next valve further away from the Point of Work (valve B).
- Record temperature readings upstream and downstream of the valve B at 5 minute intervals.
- A temperature drop of 50% after 10 minutes downstream of valve B would indicate this valve is also holding.
- At this point (20/25 minutes) the temperature at the Point of Work should be near plant room temperature.
- Double valve isolation can now be assumed as far as reasonably practical.
- Local isolation chains and padlocks should be applied to both valves and associated condensate valves and these keys locked in the lockout box with personal padlocks to allow work to commence

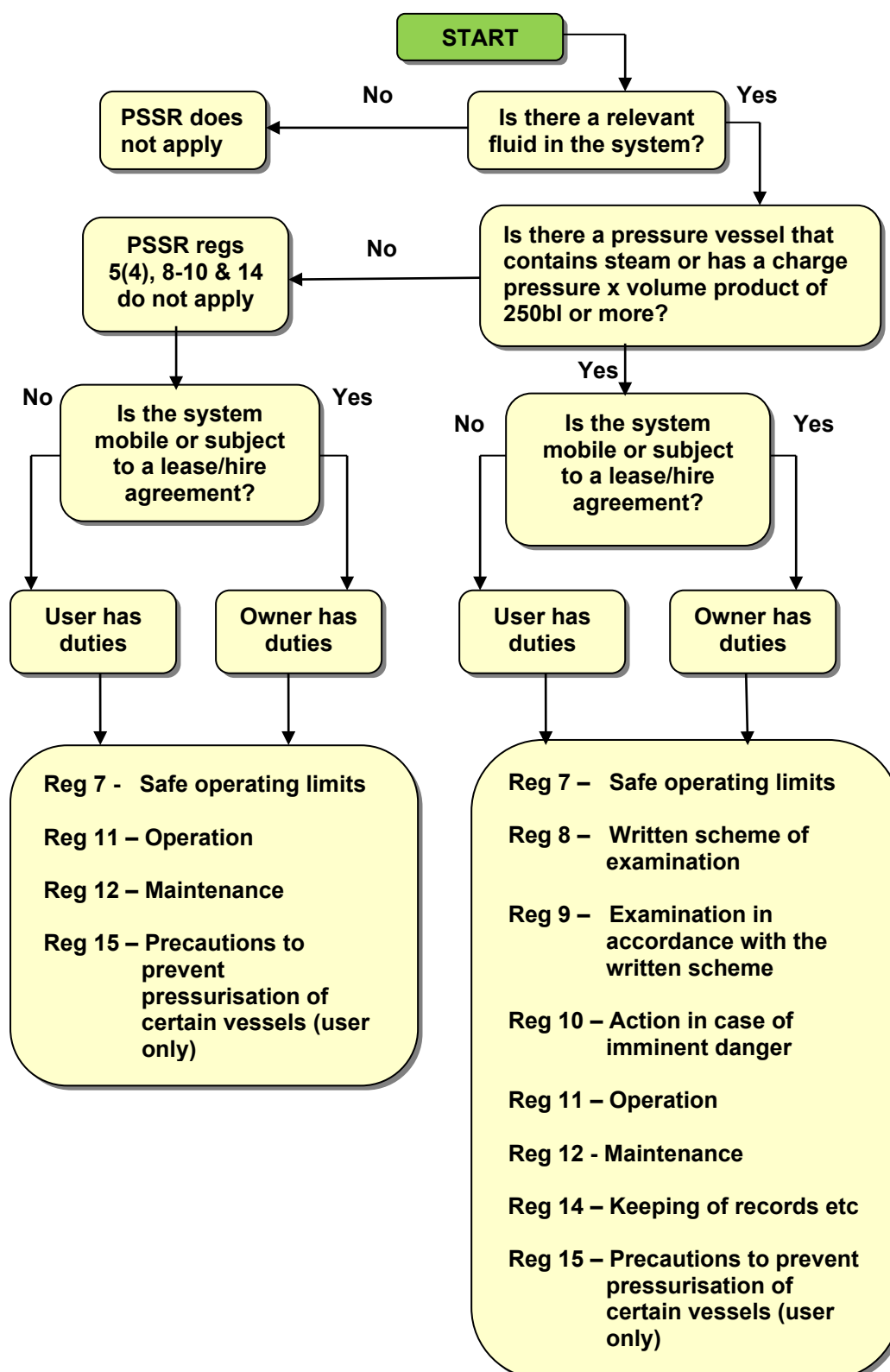
A.6 PPE – i.e. gloves and face protection should be worn when splitting the pipework as only then the isolation is confirmed.

**IF THE TEMPERATURE DOES NOT DROP AS DESCRIBED
THEN ALL WORK MUST BE SUSPENDED IMMEDIATELY AND
A PERMIT TO WORK SOUGHT AND OTHER MEANS OF
ISOLATION MUST BE PLANNED AND PROVIDED.**

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Annex B: Pressure System Responsibility - Flow Chart

Do the Regulations apply to the NHS Board's pressure system?



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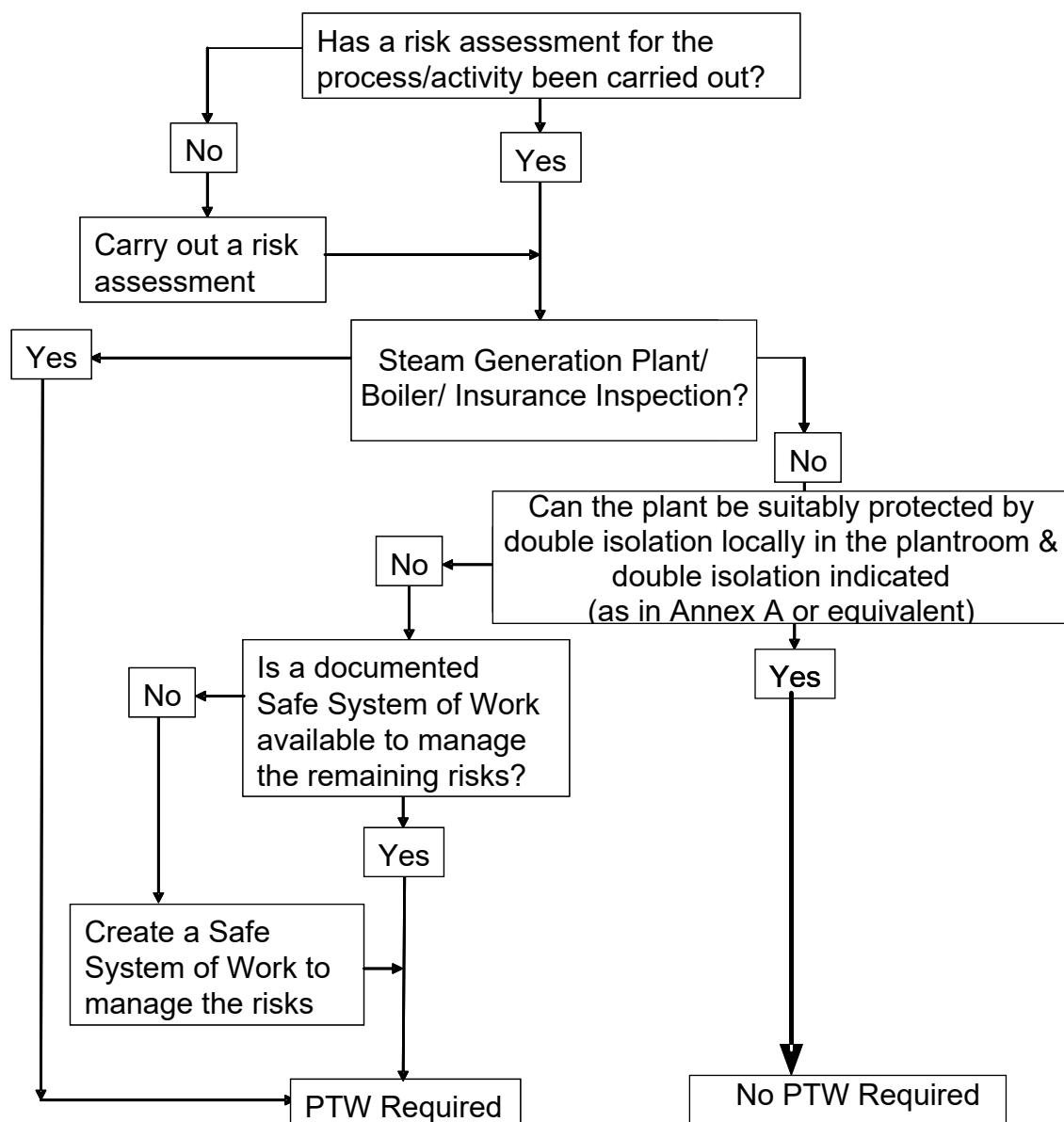
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Annex C: Permit to Work - Flow Chart



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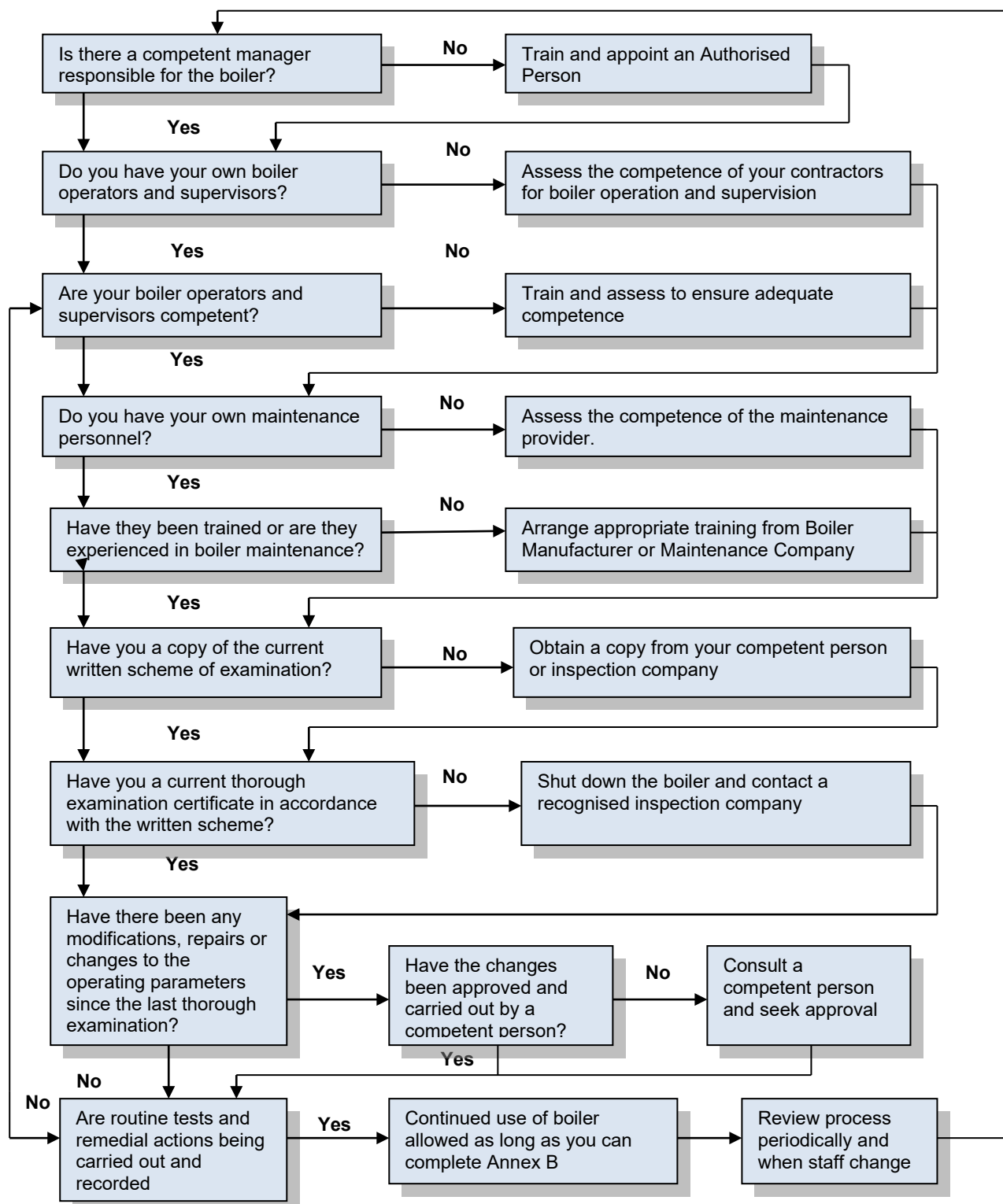
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Annex D: Staff Competency - Flow Chart



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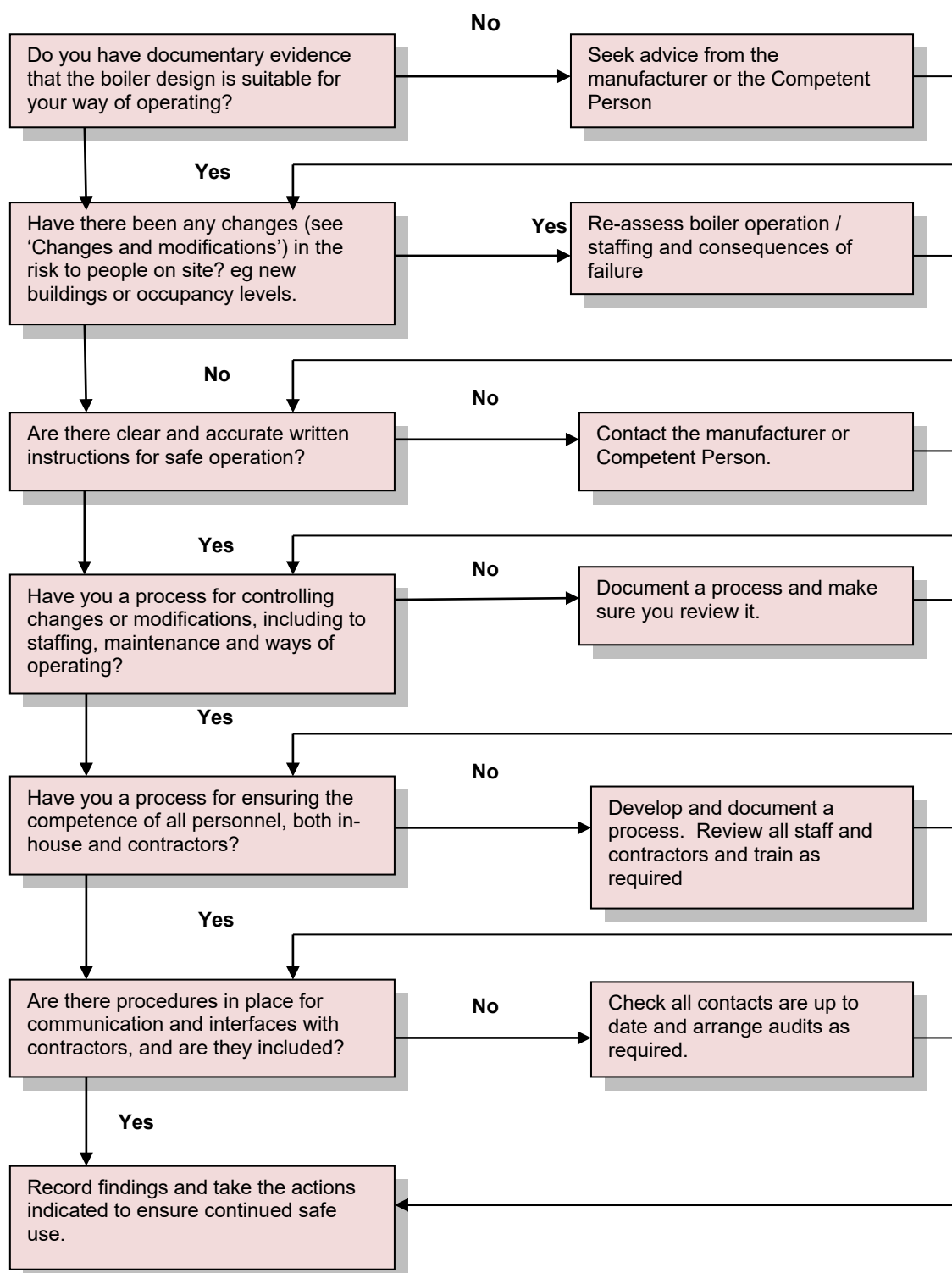
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Annex E: Safe Operation of Boilers - Flow Chart



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Annex F: Model Forms

F.1 The Model Forms contained in this annex are as follows:

- Isolation Risk Assessment
- Safety Programme
- Permit to Work
- Standing Instruction
- Temperature Isolation Record

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PRESSURE SYSTEMS - ISOLATION RISK ASSESSMENT				Risk Assessment No																										
Site:		Location:		Sheet No : of	Date																									
Activity:																														
Significant Hazards	Applicable To (Persons Affected)	Risk Rating Before Control Measure		Control Measures	Risk Rating After Control Measure																									
		High	Low		High	Low																								
Further Considerations: <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Task Method Statement Required</td> <td style="width: 10%;">Yes []</td> <td style="width: 10%;">No []</td> <td style="width: 25%;">Confined Space Permit Required</td> <td style="width: 10%;">Yes []</td> <td style="width: 10%;">No []</td> </tr> <tr> <td>Gas Isolation Certificate Required</td> <td>Yes []</td> <td>No []</td> <td>Electrical Permit Required</td> <td>Yes []</td> <td>No []</td> </tr> <tr> <td>Manual Handling Assessment Required</td> <td>Yes []</td> <td>No []</td> <td>Reinstatement Programme Required</td> <td>Yes []</td> <td>No []</td> </tr> <tr> <td>COSHH Assessment Required</td> <td>Yes []</td> <td>No []</td> <td>Asbestos Insulation or Jackets</td> <td>Yes []</td> <td>No []</td> </tr> </table>							Task Method Statement Required	Yes []	No []	Confined Space Permit Required	Yes []	No []	Gas Isolation Certificate Required	Yes []	No []	Electrical Permit Required	Yes []	No []	Manual Handling Assessment Required	Yes []	No []	Reinstatement Programme Required	Yes []	No []	COSHH Assessment Required	Yes []	No []	Asbestos Insulation or Jackets	Yes []	No []
Task Method Statement Required	Yes []	No []	Confined Space Permit Required	Yes []	No []																									
Gas Isolation Certificate Required	Yes []	No []	Electrical Permit Required	Yes []	No []																									
Manual Handling Assessment Required	Yes []	No []	Reinstatement Programme Required	Yes []	No []																									
COSHH Assessment Required	Yes []	No []	Asbestos Insulation or Jackets	Yes []	No []																									
Assessment Carried out by: Signed : Name: Date: For:		I have read, understood and will implement all control measures indicated on the Risk Assessment Signed : Name: Date: For:																												

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Safety Programme

Site:
SP No:
Isolation RA No:

The type of system which the proposed sequence of operations will make safe to work on :

.....

Location of system:

The proposed sequence of operations detailed in the Safety Programme will isolate the following parts of the system:

.....

.....

.....

.....

.....

Signed: (AP) Time & Date.....

Names (Capitals): Contact Telephone.....

In the Employ of:

Counter Signed: Time & Date.....

Names (Capitals): Position.....

Statement of Isolation

The System described above has been isolated and made safe in accordance with the Sequence of Operations overleaf.

Signed(AP):

Name (Capitals):

In the employ of:

NOTES

- A Safety Programme is to be completed for any work for which a Permit to Work is to be issued.
- To be completed by the Authorised Person Pressure Systems (AP(PS))
- To be completed precisely and legibly in BLOCK CAPITALS
- Counter signatures are only required at the specific request of the Authorising Engineer.
- Once the sequence of operations has been completed the Statement of Isolation is to be signed
- The original of this Programme is to be displayed in a prominent position in the Authorised Person room until cancelled.
- Unused lines in the Sequence of Operation are to be marked through with diagonal lines.
- A Schematic diagram of the isolation is to be entered overleaf. If a printed drawing (or section of one) is to replace a hand drawn diagram, it is to incorporate a title block which includes the Safety Programme number, the name and signature of the AP and is to be dated upon issue of the Safety Programme.
- Upon completion of task, the original is to be retained within the Pressure Systems Documents Cabinet.

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Safety Programme

Site:

SP No:

Isolation RA No:

Signed: (AP)

Date.....

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Safety Programme

Site:

SP No:

Isolation RA No:

Sequence of Operations (rule off each entry)

Entry Number (a)	Location & Identity of Valve or Component Part (b)	Event or Operation & Reason (c)	Items Required (d)	Date & Time of Operation (e)

Signed: (AP)

Date:.....

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Safety Programme

Site:

SP No:

Isolation RA No:

Sequence of Operations (rule off each entry)

Entry Number (a)	Location & Identity of Valve or Component Part (b)	Event or Operation & Reason (c)	Items Required (d)	Date & Time of Operation (e)

Signed: (AP)

Date.....

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Safety Programme

Site:
SP No:
Isolation RA No:

As the Person in Charge for the Permit to Work identified below I confirm, in signing this document that I have been shown the schematic diagram associated with this Safety Programme & Statement of Isolation and the safety arrangements at the points of isolation and at the point of work.

The following Permits to Work have been issued to carry out works on plant made safe by this Safety Programme

Permit No	Issue Date	P-i-C (Print Name)	P-i-C (Signature)	Cancellation Date	P-i-C (Print Name)	P-i-C (Signature)

I declare that all of the permits detailed above have been completed or stopped and have been cancelled and the system has been visually inspected for integrity.

This Safety Programme and Statement of Isolation is hereby cancelled.

Name (print) Signature..... Time & Date.....

Authorised Person (Pressure Systems)

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Permit to Work (Original)

Site	Permit No.
System	Location

Part 1 Authorisation

The system has been isolated under Safety Programme No..... which is on display at the AP Office.

The works to be carried out are as follows

.....

.....

.....

.....

Number of related Permit to Work

I am in receipt of and have reviewed the Task Risk Assessment/ Method Statement (RAMS) No

Name (print) Signature..... Time & Date.....

Authorised Person (Pressure Systems) Contact Telephone Number.....

Part 2 Acceptance

I accept responsibility for carrying out the works detailed in Part 1. I have reviewed the Safety Documentation & signed the Safety Programme.

I have been shown all aspect of the isolation: I have applied a Safety Lock to the Safety Key Box and retained the key.

I am in receipt of and have reviewed the RAMS No and confirm that I and anyone under my control will work within those control measures.

Name (print) Signature..... Time & Date.....

Person in Charge (Pressure Systems) Contact Telephone Number.....

Part 3 Completion

I declare that all persons, equipment, tools and instruments under my control have been withdrawn and that the works detailed in Part 1 have been:

*(a) completed.

*(b) stopped and abandoned, and that the system has been made safe pending further works, the reasons for stopping the work and the actions taken are detailed overleaf.

Name (print) Signature..... Time & Date.....

Person in Charge (Pressure Systems) Contact Telephone Number.....

Part 4 Cancellation

I declare that the works detailed in Part 1 have been: (a) satisfactorily completed* or (b) stopped* and that this permit is cancelled. The entry relating to this permit on the Safety Programme of Isolation has been signed as closed.

Name (print) Signature..... Time & Date.....

Person in Charge (Pressure Systems) Contact Telephone Number.....

* delete as appropriate

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Permit to Work (Original)

The following details the reasons for stopping the work and the actions taken:

Name (print) Signature..... Time & Date.....

Person in Charge (Mechanical)

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Standing Instruction (Original)

Site:	Serial No.
Part 1 Identification Issued to:..... (Person in Charge) Employed by:..... Issue Date:..... Expiry Date:..... Location and type of system to which this instruction applies:..... Tasks to be undertaken on the above-mentioned system Special instruction or safety measures	
Part 2 Authorisation I confirm that the tasks listed above may be carried out by the named Person in Charge providing they adhere to all applicable safety measures and special instructions. Signed:..... (Authorised Person Pressure Systems) Name:..... Time & Date:..... Employed by:..... Contact No.:.....	
Part 3 Acceptance I accept responsibility for carrying out the above-mentioned tasks and will adhere to all applicable safety measures and special instructions. Signed:..... (Authorised Person Pressure Systems) Name:..... Time & Date:.....	
Part 4 Cancellation I hereby declare that this Standing Instruction is cancelled Signed:..... (Authorised Person Pressure Systems) Name:..... Time & Date:.....	

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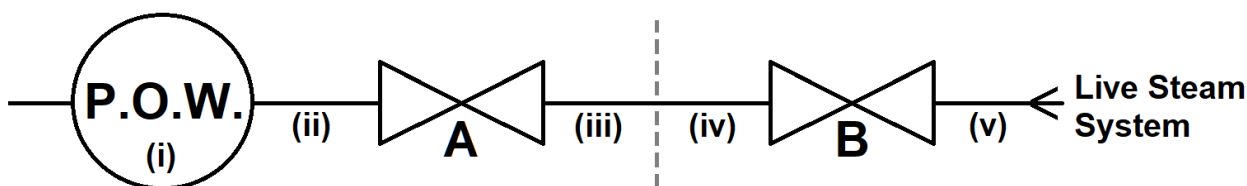
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Temperature Isolation Record

LOCATION	
EQUIPMENT (POINT OF WORK)	
TASK DESCRIPTION	
ASSET NUMBER	
JOB NUMBER	
VALVE A I.D. NUMBER	
VALVE B I.D. NUMBER	



TIME	POINT OF WORK TEMP	DOWNSTREAM VALVE A TEMP	UPSTREAM VALVE A TEMP	DOWNSTREAM VALVE B TEMP	UPSTREAM VALVE B TEMP
	(i)	(ii)	(iii)	(iv)	(v)
0 MIN. (A+B OPEN)					
05 MIN. (A SHUT)					
10 MINUTES (A SHUT)					
15 MINUTES (A+B SHUT)					
20 MINUTES (A+B SHUT)					
25 MINUTES (A+B SHUT)					
30 MINUTES (A+B SHUT)					

SIGNED	
DATE	

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Temperature Isolation Record

The procedure is as follows:

- Identify two suitable points of isolation upstream of the point of work.
- Using the calibrated infra-red thermometer take and record reference readings of the pipework either side of the valves and at the Point of Work (0 Minutes).
- Close the valve nearest to the Point of Work (valve A).
- Record temperature readings upstream and downstream of this valve and at the Point of Work at 5 minute intervals.
- A temperature drop of 50% after 10 minutes downstream of the valve, and at the point of work would indicate valve A is holding.
- Close the next valve further away from the Point of Work (valve B).
- Record temperature readings upstream and downstream of the valve B at 5 minute intervals.
- A temperature drop of 50% after 10 minutes downstream of valve B would indicate this valve is also holding.
- At this point (20/25 minutes) the temperature at the Point of Work should be near plant room temperature.
- Double valve isolation can now be assumed as far as reasonably practical.
- Local isolation chains and padlocks should be applied to both valves and associated condensate valves and these keys locked in the lockout box with personal padlocks to allow work to commence

PPE - i.e. gloves and face protection should be worn when splitting the pipework as only then the isolation is confirmed.

**IF THE TEMPERATURE DOES NOT DROP AS DESCRIBED
THEN ALL WORK MUST BE SUSPENDED IMMEDIATELY AND
A PERMIT TO WORK SOUGHT AND OTHER MEANS OF
ISOLATION MUST BE PLANNED AND PROVIDED.**

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