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1.0 Management of Pressure Systems Safety

In broad terms, the Authorised Person is responsible for maintaining the Pressure Systems management system. Where more than one AP is on site the responsibility is shared, however any appointed Co-ordinating AP will have ultimate responsibility.

The management system will include such items as the Pressure Systems Document Cabinet, the Pressure Systems Document Register, safety programme documents, LOTO equipment, Asset Registers, Written Schemes of Examination, inspection reports, test certificates, risk assessments, audit reports and appointment documentation; i.e., all the things that prove that a coherent system of management and control is in place.

Whilst a full explanation of these contents is out-with the scope of this document, it must be understood that the management system is there for a reason; primarily that any pressure system within our control can be and will be operated and maintained safely by all concerned, without exception or exemption.

Those parts of the management system which are directly relevant to the Skilled Persons will be described in the following sections.

2.0 Safe System of Work

A Safe System of Work (SSW) is one whereby the job is managed effectively, utilising competent people, the right tools and equipment, in a methodical, risk-based and agreed manner. A permit-to-work (PTW) alone does not provide a SSW; a PTW is merely a record of what is allowed to happen and by whom, and requires other supporting evidence such as Risk Assessments and Method Statements (RAMS), training records, etc.

However, it is important that we document our SSW. Doing so provides evidence of what has been done and the level of controls in place. This is not only useful should things go wrong; it allows us to review our practices and reflect on what improvements could be made, and if nothing else, it provides historical evidence of work carried out.

In terms of work on pressure systems, typical components of a SSW are:

2.1 Safety Programme and Statement of Isolation (SP/SOI)

This document will be prepared by and completed by the AP(PS). It is utilised whenever an isolation on a live high risk system needs to be made in order to make it safe for work to be carried out. The AP(PS) will utilise an Isolation Risk Assessment and once the isolation has successfully been carried out, proven and safety locks applied, he/she will then sign the SP/SOI **before** issuing any work permits for that system as proof that the system is safe to work on.

The nominated Person-in-Charge of the working party (PiC) will sign the SP/SOI to acknowledge that the system is safe to work on, as demonstrated by the AP(PS).

Any persons receiving work permits (of any type related to the tasks) are to sign on to the SP/SOI at the opening and cancellation or closure of those permits.

2.2 Valve Guards, Safety Signage and Safety Locks

In order to ensure that a physical isolation can remain in place for the entirety of the intrusive activity, some form of mechanical device is employed which ensures that that isolation cannot be altered unwittingly. Valve guards, of which there are various designs, are utilised to form a physical barrier to prevent the valve being operated once they are locked off. They are designed so at least one safety padlock can be used to secure them. Some valves, electrical isolation switches and circuit breakers have inherent points for a safety padlock to be fitted without the use of additional guards, although safety hasps may be fitted to allow multiple safety padlocks to be employed. In each case, whenever safety locks are used, it is recognised good practice to reinforce this with appropriate safety signage (for example, displaying warning notices such as “Do not Operate” or “Valve Closed”, etc). This is especially relevant for remote isolation points.

2.3 Permit-to-Work (PTW)

For pressure systems, a Permit-to-Work is required where the integrity of a system is to be breached, when either:

- The system is classed as high risk, or
- The system is classed as low risk but the approved or acceptable method of isolation is not achievable.

(The exception to a PTW is the initial stage of a two-stage isolation which is done under the direction of the AP)

The pressure systems PTW will record the following information:

- The date, type and location of the pressure system;
- The serial number of the Statement of Isolation which makes the work possible;
- A brief description of the work to be carried out under the permit;
- The Task Risk Assessment which applies to the work detailed (as provided by the PiC);
- Any other permits issued relevant to the task (e.g., confined space, hot works);
- The name and signature of the person (AP) issuing the permit, along with the date and time it was issued;
- The name and signature of the person (PiC) accepting the permit, along with the date and time it was received;
- The name and signature of the person (PiC) closing the permit, along with the date and time it was closed;
- The name and signature of the person (AP) receiving the closed permit, along with the date and time it was closed;
- Whether the work was cancelled or completed. If cancelled, a description of why should be detailed on page 2 of the permit and signed by the PiC.

Upon closure, the PiC should also sign Section 3 of the SP/SOI where all issued permits are recorded.

The PTW does not record all members of the working party, only the PiC. A full list of the working party members (Skilled Persons, labourers, maintenance assistants, etc) can be provided as part of the Method Statement.

Issue, acceptance and cancellation of a PTW:

- The AP(PS) must nominate a Person-in-Charge (PiC) from the skilled persons in the working party. Naturally, a working party of one automatically makes that SP the PiC.
- Before any documents can be issued or isolations made, the AP and PiC must discuss and agree what work is to be done, what is feasible, what, how and when the isolations are to be made to make the work possible and safe, what other precautions or SSW needs to be put in place and any foreseeable outcomes which need to be mitigated.
- The PiC must then draw-up a suitable Task Risk Assessment and Method Statement. These may be previously adopted or “generic” examples, but they must be agreed to as applicable and relevant for the necessary task by the AP(PS).
- Meanwhile, the AP(PS) draws up the Isolation Risk Assessment and SP/SOI, which is then implemented at the agreed time and finally signed by the AP as proof that the system is safe to work on.
- Before the PTW is issued the AP demonstrates the system or component part which has been isolated. All keys for the safety locks used in the isolation are deposited within the LOTO keybox and the safety padlocks for the AP and PiC are applied and the keys retained.
- The AP(PS) is to issue the PTW immediately before the work is to commence and it will remain in force until the work is completed, or, if for some reason it cannot be completed, until the job has to be abandoned.
- Ideally, the PTW should be issued at the point-of-work. It is reasonable to expect a delay between the SP/SOI being signed off by the AP and the PTW being issued in order to allow time for the system to cool down to a reasonable temperature for work to be carried out safely. This should be monitored and confirmed by a calibrated infra-red temperature gauge.
- The identity of the pressure system or component parts to be worked on are confirmed, along with the safety arrangements at the point of work and at points of isolation, special instructions or safety measures and lines of communication.
- The AP then issues the PTW and the PiC signs to accept it. The PiC also signs the SP/SOI to acknowledge the system isolations and permit issue.
- Once the work is completed, the PiC should contact the AP and together they should inspect the components / system worked on for quality and integrity, along with the work area in general. The PiC can then sign the permit to close it and this should be counter-signed by the AP to cancel it as complete. Signatures are also required in Section 3 of the SP/SOI.

- If both parties can agree that the isolations can be removed so that the system can be re-instated, then both the PiC and the AP must remove their safety padlocks from the LOTO keybox to enable the AP to begin the process of removing all system safety locks.
- If, for any reason, the planned work cannot be completed, the PiC must inform the AP at the earliest opportunity. Once this situation has been confirmed, the Pic must sign the PTW to cancel it, with an explanation of the circumstance given on page 2 of the permit. This should be counter-signed by the AP to cancel the permit as stopped. Again, signatures are also required in Section 3 of the SP/SOI.
- Dependant on the circumstances of the permit cancellation, a decision will have to be made as to whether the system is re-instated at that point in time or not.

When the duty AP(PS) issues a pressure systems PTW, this can only be issued to a Skilled Person (as PiC) or to another AP. An AP cannot issue a PTW to themselves.

A Permit-to-Work is not required for routine operational tasks without the use of tools; for example, sampling, water treatment, changing over duty plant or draining air receivers.

Work on low risk systems where a PTW is not required is to be controlled by the use of a Standing Instruction.

2.4 Standing Instruction (SI)

A Standing Instruction may be issued by the duty AP(PS) to Skilled Persons for either one-off or a repetitive task on pressure systems where a PTW is not appropriate.

In broad terms, if the pressure system is simple and the necessary isolations are basic and present low risk, then a PTW would not be appropriate because there would not be a need for a Statement of Isolation by the AP. The isolations would be carried out by the PiC of the working party, as per the instructions detailed on the Standing Instruction document (as a PTW requires a SOI). An example would be the isolation of an air receiver on a simple, point-of-use compressed air system.

A Standing Instruction may also be used for tasks which require working on a live system, providing the AP(PS) is satisfied that the risks are low; examples could be replacing a pressure gauge on a low pressure system where suitable isolations are available, or the replacement of a 2nd-fix valve on a medical gas terminal unit.

Note: *with regard to changing or repairing 2nd-fix valves on live medical gas pressure systems, a Standing Instruction is used to reinforce the Safe System of Work put in place to protect the working party. It does not replace the need for a Low Hazard MGPS work permit. However, MGPS permits are unique in that they exist to protect the end user (i.e., patients), rather than the people working on those systems. Skilled Persons working on such systems should have received suitable training on a CP(MGPS) course as a minimum.*

Standing Instructions contain the following information:

- location and type of system to which the instruction refers
- isolation procedure (if applicable) and detail of tasks to be carried out
- any special instruction or safety measures applicable
- name of Skilled Person and employer

- the validity period of the SI

Standing Instructions must contain enough detail with respect to the procedure required to be undertaken by the Skilled Person to ensure that the system is safe before the commencement of work.

- They may contain specific instructions, or refer to an attached procedure which details the instructions for an isolation and de-pressurisation to be undertaken to allow a task to be carried out safely.
- There could be several such procedures supporting a Standing Instruction, as it could cover more than one item of plant or system.

Standing Instructions are to be supported by Task Risk Assessments which cover both the isolation procedure and task, in a similar manner to those which are adopted by the PTW system.

Issue, acceptance and cancellation of a Standing Instruction:

- A Standing Instruction can be drawn up and issued by the duty AP(PS), or simply issued - for those Standing Instructions which are already drawn up and valid for a period of time (for repetitive tasks).
- The Skilled Person who is to sign on to the Standing Instruction is to provide a suitable Task Risk Assessment for the job involved, or agree with the AP(PS) that any TRA accompanying the Standing Instruction is applicable.
- Having understood the instruction(s) and being prepared to undertake the task(s) therein, the Skilled Person is to sign and accept the Standing Instruction. On signing the acceptance of the instruction, the Skilled Person authenticates the instruction as valid and becomes the Person in Charge (PIC) of the permitted task(s).
- For Standing Instructions applying to **one-off, specific tasks**, the PIC should return the SI to the AP(PS) and cancel it at the completion of the job and confirm this, or
- if the job cannot be completed, and needs to be abandoned, the PIC should return the SI to the AP(PS) and the SI should be cancelled. The reason for cancellation should be noted on the SI and in the Pressure Systems Operation Record by the AP.
- For Standing Instructions for **repetitive tasks** and **which are valid over a period of time**, the PIC should inform the AP when the job has been completed (or whether it has been abandoned for some reason), but the SI is cancelled by the AP on the date of expiry. *(The completion of the job would be recorded on the Skilled Persons job card and on the MGPS Low Hazard work permit, in the case of a 2nd-fix TU repair.)*
- The only exception to this is if the isolation(s) and or task(s) relating to the entire scope of the Standing Instruction are no longer feasible for some reason, at which point the SI would need to be cancelled and the reasons recorded as described above.
- A Standing Instruction can be cancelled by the duty AP at any time; the date and reason should be noted on the document and in the Pressure Systems Operation Record.

2.5 The Pressure Systems Operating Record (PSOR)

This document is generally populated by the duty Authorised Person and serves as a day-to-day record of what Safe System of Work documents are open and have been issued (these include Safety Programmes/Statement of Isolations, Permits-to-Work and Standing Instructions), as well as those which have been closed and cancelled.

The PSOR also documents which isolations have been carried out, which systems have been reinstated and any modifications to pressure systems or changes in practice.

Anyone who is involved in working with Pressure Systems can write within it, providing the information is legible, accurate and relevant.

2.6 The Pressure Systems Document Register

This register of document(s) is maintained by the lead AP(PS) for the site and contains all relevant information for the pressure systems on that particular site, as well as instructions, policies and procedures which are pan-Lothian. Some contents are filed separately for practical reasons.

Whilst the Register is kept within a locked cabinet, any person whose work is concerned with pressure systems should know about its whereabouts and access to it is available upon request from the duty AP(PS).

2.7 Safety keys and the LOTO key box

The LOTO key box is used for the safe keeping of all keys for any safety padlock which is in use. (LOTO stands for Lock-Off, Tag-Out). Safety padlocks differ from working padlocks in that they only have one key, which is numbered. Also, the padlock can usually only be locked whilst the key is in the barrel of the lock, so that it is not locked by mistake.

During pressure systems isolation, once the safety locks are applied to the valve guards, they should be bunched together and labelled, then deposited into the safety LOTO key box. The box is then closed and secured with a minimum of two padlocks; one for the AP, and one for the PiC of the working party (or one for each PiC if there is more than one working party). The keys for these padlocks are then kept safely on each respective person.

This procedure ensures that no safety locks can be removed until both / all parties are ready for the locks to be removed; usually once the work is complete (or abandoned) and the work permits closed / cancelled. It therefore ensures isolations remain in place and systems are safe until work is complete, or at least until all parties concerned are happy for the locks to be released.

Any key for any type of padlock or interlock can be deposited into the LOTO key box, provided it is relevant for the job to be carried out safely and suitable for the isolation to be in place for the duration of the task. As all keys for safety padlocks are individually numbered, it does not matter if a safety padlock for an electrical isolation is applied to the same bunch as the safety padlocks for the steam isolating valves, for example. However, any keys which are added singularly should be individually labelled, or a note added in the statement of isolation so that they can be readily identified later on. In any case, whenever specific locks are utilised in isolations, the keys for those should be handed to the AP(PS) for safe-keeping within the LOTO keybox.

3.0 Training and Assessment for Skilled Persons

It is assumed that all those who are termed Skilled Persons have attained some level of competency and experience with mechanical and pressure systems.

It is concerned best practice for any Skilled Person candidate to have completed a SP(PS) competency course provided by a specialist training company.

Ultimately, however, the level of competency for a Skilled Person working on pressure systems will be based upon their skills, training, knowledge, attitude and experience. This will provide the basis for their appointment by the lead AP(PS) for the site.

With regard to contractors who are working as a Skilled Person, it is up to the duty AP(PS) to ensure that they are sufficiently trained and competent to carry out their prescribed tasks on a pressure system. Whilst this may seem to have been decided by others, based upon the company's reputation and portfolio, an AP(PS), having a duty of care, does have the right to call into question any individual they have reason to believe falls short of the prerequisite merits.

For NHS employees, a Skilled Person has to be appointed by the lead AP(PS) for the site, based upon the criteria above. It is therefore possible that the appointment comes with certain limitations. This is to ensure compliance with the law, but also serves to protect the individual from being tasked solely to work on equipment for which they are unfamiliar or untrained to operate or maintain.

A Skilled Person with such limitations may form part of a working party with one or more Skilled Persons who are competent and appointed, to work on pressure systems or equipment beyond their current capability in a trainee capacity, in order to gain suitable knowledge and experience, on the condition that the PiC provides adequate supervision throughout.

Therefore, a Skilled Person must only work on the type of pressure system or equipment for which they have been appointed.

Points to note:

- In general, training course qualifications last for three years (or as stated on the qualification).
- Appointments will be reviewed as per the appointment certificate, or reviewed at a period of three years. However, at the discretion of the lead AP(PS), they may be cancelled at any time. All appointments are documented and certificates kept in the Pressure Systems Document Register. Each appointed Skilled Person should be notified in writing of their appointment by the AP(PS).
- A Skilled Person can be re-assessed at any time by the lead AP(PS), especially if there is doubt over an employee's capability or suitability in that role.
- Re-assessment will be necessary for a Skilled Person to advance the scope of their current appointment; for example at the completion of an apprenticeship.
- Assessment of a Skilled Person takes the form of a series of written and oral questions on a one-to-one basis by the lead AP(PS), in order for him/her to satisfy themselves that the Skilled Person has attained a level of understanding of how safe working with pressure systems is managed, their roles within that safe system of work, as well as possessing the

overall skills, knowledge, attitude, training and experience desired in order to be able to fulfil the role of Skilled Person to some reasonable degree. The outcome of this will determine what limits, if any, are to be imposed upon that person's appointment, and whether further training or monitoring is required.

- In any case, each assessment is to be recorded, with all assessments being fair and equal, in order to reflect the Qualities of NHS Lothian.