



Lockout and Mitigation Program

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1. Objectives

This security program has for primary goal to establish norms concerning the lockout and mitigation procedures for the potentially dangerous apparatus of the building. Thus, it aims to reduce the risks of endangering the workers during a maintenance operation.

1.1 Lockout procedure

When an apparatus is lockable, and hence it is possible to decommission it temporarily, the objective of the lockout process is to isolate this equipment from all its energy sources. The lockout procedure aims to offer a safe working method to the employees.

1.2 Mitigation procedure

If an apparatus is not lockable, it cannot be completely decommissioned¹. The objective of the mitigation is to minimize the risk incurred by the workers during a maintenance operation.

¹ By referring to sections 5.1.1 and 5.1.3 of the norm Z460-05 named « Maîtrise des énergies dangereuses: cadenassage et autres méthodes » published in 2005 by the Canadian Standards Association (CSA). (See annex 1)

2. Glossary

To ease the understanding of the document, the following glossary defines a few terms related to lockout.

2.1 Definitions of specific terms

Lockout procedure: Set of operations one must do with lockout specific devices in order to isolate an apparatus from all of its energy sources.

Mitigation procedure: Set of operations one must do to minimize the risk incurred by the worker who undertakes a maintenance operation on a partially decommissioned apparatus.

Tableau des risques: Department-specific table which contains a detailed list of the apparatus, the maintenance operations, the risk assessment and a lockout and mitigation file if the risk is judged significant. (See annexes 2, 3 and 4)

Fiche de cadenassage: File containing the apparatus-specific lockout procedure as well as its reiteration into service. (See annexes 5 and 6)

Fiche de mitigation: File containing the mitigation procedure relative to a maintenance operation on a specific apparatus. (See annexes 7 and 8)

Residual energy: Energy remaining in an apparatus once it has been isolated from its energy sources.

Work voucher: File indicating the maintenance operations assigned to the workers. (See annex 9)

Maintenance operation: Task to be performed on an apparatus.

Label: Visible warning meant to be put on certain apparatus in order to identify which ones require maintenance operations.

Lockout devices: Tool used to isolate an apparatus from its energy sources by blocking the use of its different control systems. (See annex 10)

Hasp: Lockout device which allows the use of many locks on a same apparatus. (See annex 10)

Valve lock: Lockout device which prevents the use of a valve. (See annex 10)

Personal lock: Employee-specific lock clearly identified with a photo of the employee as well as some personal information, such as their name and their department.

Departmental lock: Department-specific lock clearly identified with a color. Each department has its own assigned color.

Exemption: Authorization to proceed in another manner.

2.2 Legal requirements

The employees must acknowledge the articles 49 and 51² of the Loi sur la santé et sécurité au travail (LSST) which describes the engagements between the employees and employer.

The articles 185 and 186³ of the Règlement sur la santé et la sécurité du travail (RSST) which develop the engagements concerning the maintenance operations for the potentially dangerous apparatus are also suggested to be acknowledged.

² See annex 11

³ See annex 12

3. General lockout procedure

The primary goal of this general lockout procedure is to attain a simple and effective system for all the concerned employees.

The secondary goal is to attain a system offering a continuous update of the lockout and mitigation program, which would offer the opportunity to evolve gradually toward a more complete and better adapted program.

3.1 Prerequisites

Before the instauration of the lockout and mitigation program, the concerned employees need to follow a lockout formation with an external consultant. This formation is focused on the present program and has to be renewed every two years.

Three months prior to the official instauration of this program in the establishment, an adjustment period allows the concerned employees to become progressively used to these new procedures without however feeling rigorously constrained to them. This adjustment period is also beneficial considering the multiple updates that would come out of it, which eventually lead to an improvement of the program by making it even more suitable to the workplace when it is implemented.

3.2 Association of the « fiche de cadenassage » with the work voucher

In each department, a binder, containing every « fiche de cadenassage » and « fiche de mitigation », as well as the « Tableau des risques », is available for the employees.

When the employees receive or conceive their work voucher, they identify, with the help of the « Tableau des risques », which procedure they have to follow according to the task they are assigned to on their voucher. Afterwards, they apply a stamp⁴ on the voucher. In this case, the stamp is blue and contains six cases. These cases allow the employees to identify the apparatus, the maintenance operation to perform and the « fiche de cadenassage » or « fiche de mitigation » they will be using. Moreover, there is a free space for the inscription of the date of the first update, along with the employee's name and signature. By signing, the employee acknowledges the conformity to the procedure he identified on the voucher. The blue color of the stamp means that the specific sheet associated with the maintenance operation exists, that its procedure is

⁴ See annex 13

applicable and that it has been applied without any complication. When the administrative agents receive the work vouchers from the employees, the blue color stamp indicates to them that they can simply archive the vouchers.

3.3 Particular situations

In a situation in which the Fiche, the task or even the apparatus hasn't been listed in the «Tableau des risques», the employees must apply the stamp⁵ named: « Opération non répertoriée » on their work voucher. Afterwards, they must contact a member of technical support management in order to propose a safe working procedure. Once both parts agree on a solution, the employee fills in the cases of the stamp. In this case, the color of the stamp is red and has six cases. These cases allow the employees to identify the apparatus and the maintenance operation to perform. Also, free spaces are left for the employee to fill in his name, signature and the name of the member of technical support management who approved the procedure proposed by the employee. Finally, on the stamp, a last space is reserved for the signature of the direction member. When the work voucher is given to the administrative agents, the red color indicates that they need to have it signed by the member of technical support management involved in the work procedure. By signing, the employee commits himself to respecting the procedure previously determined with the direction. Likewise, the direction member involved demonstrates his consent with the proposed procedure by signing. Then, the administrative agents print a copy of this voucher to send it to the person responsible for the updates of the lockout and mitigation program. The original voucher can now be archived without any further complications.

On the other hand, in a situation in which the employees judge the situation being impossible to find a lockout or mitigation procedure proposed by the « Tableau des risques », it is possible to ask for an exemption. To do so, the employee must discuss an alternative procedure with the direction of technical support. Once both have an agreement, the employee must apply the stamp⁵ named « Dérogation » on the work voucher. This stamp is red and has nine cases. These cases allow the employee to identify the apparatus, the maintenance operation to perform and the « fiche de cadenassage » or Fiche de mitigation he will be using. Moreover, there are free spaces for the inscription of the date of the first update, a brief description justifying the

⁵ See annex 13

exemption request, his/her name and signature as well as the name of the member of direction who approved the exemption request. Finally, on the stamp, a space is reserved for the signature of the direction member. When the work voucher is given to the administrative agents, the red color indicates that the signature of the direction member is required for the exemption request. By signing, the employee undertakes to respect the procedure he determined with the direction. Likewise, the direction member involved demonstrates his agreement with the exemption request as well as the alternative working methods taken by the employee by signing the voucher. Then, the administrative agents print a copy of this voucher to send it to the responsible for the updates of the lockout and mitigation program. The original voucher can now be archived without any further complications.

It should be noted that it is paramount that in order to insure that the program functions correctly, the « fiches de cadenassage » and the « fiches de mitigation » should be cleverly listed in the « Tableau des risques » so that they can be easily accessible by the employees.

3.4 Location of lockout devices

In each department, a storage area must be established so that the lockout devices, such as the valve locks, the labels, the hasps and the departmental locks, are stored in the same place. Then, each employee has a personal lock and key in his/her possession.

Afterwards, a compartment fitted with a lock must be installed in each department. This compartment's purpose is to store the department locks' keys. Only the employees of a specific department, as well as the technical support direction members, have access to the keys which unlock this compartment.

3.5 Operating procedure of the lockout devices

For short duration tasks, i.e. for tasks requiring less than one day of work, the employees involved must first set up a hasp on each of the devices controlling the energy sources. Secondly, each employee must install a personal lock on each hasp. It is when all of their tasks have been accomplished that they are allowed to take their personal locks off. If for some reason a task spreads on more than a day, the involved employees must install a department lock on each associated department's hasp, which has to be done before removing any personal lock.

For long duration tasks, i.e. for tasks requiring more than one day of work, the employees involved must first set up a hasp on each of the devices controlling the energy sources. Secondly, each employee must install a personal lock on each set up hasp. Thirdly, a departmental lock, for each department involved in the task, is installed on each hasp. Fourthly, the keys and their respective locks are identified and the departmental locks' keys must be secured inside the departmental compartments instituted for this purpose. Once the work with the equipment is completed, the employees remove their personal locks while leaving the departmental locks in place for the total expected duration of the tasks in that department.

3.6 Singular cases and subcontracting

In the situation in which a lock's key is forgotten or lost, the concerned employee must deposit a request to the direction of technical support so that the lock may be cut. If the lock in question is a personal one, the direction must contact the employee who owns the lock before cutting it in order to insure his safety.

Maintenance operations on some apparatus are sometimes entrusted to subcontractors. The tasks undertaken by the subcontractors are divided in two categories: tasks accomplished as part of a maintenance operation and tasks accomplished as part of a project. Regarding the maintenance operations, when the subcontractor needs to lock an energy source, he must get in touch with a maintenance employee of the hospital. This employee will then install his own lockout devices since generally, only the hospital's maintenance employees are allowed to lockout an energy source during a maintenance operation. Nevertheless, in specific cases, a contractor can obtain a special authorization from the direction of technical support to install his own locks by himself. Regarding the project aspect, when a contractor is in charge of a working site, he must present his own lockout plan to the hospital's direction of technical support beforehand.

Consequently, it is the contractor's role to manage the lockout inside his working site. Every external energy source found on the site requiring a lockout can only get one via the work of an internal employee. It should be noted that all subcontractors are responsible of their own safety. Nevertheless, the establishment's personnel have the right to compel a change in the behaviour of a subcontractor demonstrating an unsafe working method.

4. Concerned personnel and their responsibilities

4.1 Concerned personnel

The lockout and mitigation program targets the members of the direction of technical services, their administrative agents, as well as the following employees: machinists, plumbers, fixed machine mechanics, cabinetmakers and electricians.

An intern might be requested to carry out the follow-up and update of the lockout and mitigation program, namely during his first months of employment in the establishment.

4.2 Responsibilities

4.2.1 Direction of technical support

The direction members of technical support have the responsibility to ensure that the employees implement the procedures in their working habits. A monthly audit must be performed on a randomly chosen employee. In a situation of insubordination regarding the application of the lockout and mitigation procedures, corrective measures must be taken by the direction.

The direction members have the responsibility to provide the employees with the proper equipment for the application of the lockout and mitigation procedures.

The direction members are responsible for taking the decision to cut the locks when they are forgotten on an apparatus, or when their key is nowhere to be found. In a situation in which a personal lock has been removed, the direction must first make sure that the security of the owner of the lock is not compromised.

The direction members have the responsibility to provide the employees with accessible training sessions on the lockout procedure, at least once or twice per two years.

The members of direction have the responsibility to authorize or refuse an exemption concerning a lockout or mitigation procedure when asked by an employee. They must be able to judge if whether or not an exemption is really necessary and, if judged necessary, they must evaluate the safer working method for the employee. When approved, the direction of technical support must sign the work voucher given by the employee once the operations are over. By signing, the direction confirms the authorization of the exemption requested by the employee.

The direction members have the responsibility to determine with the employees the safer working procedures that should be followed for the different tasks not listed in the « Tableau des risques ». When a procedure is judged safe, the direction of technical support must sign the work voucher given by the employee once the tasks are over. By signing, the direction confirms the authorization of the working methods followed by the employee.

Finally, it is preferable if the direction members assign to the very person who created the « Fiches » the responsibility to overview this program during its first months of implementation in the establishment. If not feasible, the direction members have the responsibility to ensure the evolution of the lockout and mitigation program, noticeably they must update the « fiche de cadenassage », the « fiche de mitigation » and the « Tableau des risques ». An update is required following an apparatus replacement, a change in the lockout and mitigation procedures, or simply when optimisation of the functionality of the program is possible.

4.2.2 Administrative agents

The administrative agents have the responsibility to print and hand out the work vouchers to the employees. Once the employees are done with their asked maintenance operations, the administrative agents have the responsibility to retrieve the work vouchers. When retrieved, after a blue color stamp has been applied on the voucher, the administrative agents are simply required to archive them. When a red color stamp is applied on a work voucher, the administrative agents need to obtain the direction member of technical support's signature on the concerned voucher. Once this detail has been taken care of, the administrative agents must send a copy of the work voucher to the person in charge of the lockout and mitigation program's update. Then, the original vouchers are archived concordantly with the usual procedure by the administrative agents.

4.2.3 Employees

The employees have the responsibility to follow the formative sessions on the lockout program.

When the employees receive their work voucher, they need to identify, with the help of the department-specific « Tableau des risques », the appropriate « fiche de cadenassage » or « fiche de mitigation » related to the maintenance operations

described on their vouchers. In order to ease the association of a « fiche » with a voucher, the different « fiche de cadenassage » and « fiche de mitigation » are primarily classed according to the different apparatus and then, in accordance with the different tasks to execute on these apparatus.

When the employees judge the procedure to be safe and relevant, they need to apply the blue color stamp and fill in the different cases. This stamp symbolizes their engagement in executing the procedures described on the voucher. Once the tasks are done, the employees must give their work voucher back to the administrative agents.

When the « fiche de cadenassage » or « fiche de mitigation » does not exist for a given operation, the employees must discuss with a direction member of technical support about the procedure to follow accordingly. Once the procedure is approved, the employee must apply a red stamp named « Opération non répertoriée » and fill in the different cases. When all the tasks are done, the employees must give their work voucher back to the administrative agents. Then, the direction member implicated in the choice of the procedure to follow is required to sign in the appropriate case of the stamp in order to certify his approval of the work method.

When the employees judge a procedure to be irrelevant or unsafe, they must discuss about adopting an alternative procedure with a direction member of technical support. Once they agree on a procedure, the employee must apply a red stamp named « dérogation » and fill in the different cases. When all the tasks are done, the employees must give their work voucher back to the administrative agents. Then, the direction member implied in the choice of the procedure to follow is required to sign in the appropriate case of the stamp in order to certify his approval of the exemption requested by the employee.

4.2.4 Person responsible of the lockout and mitigation program's update

The person responsible of the update of the lockout and mitigation program has the responsibility to constantly improve the program. In order to do so, he receives a copy of all the red-stamped work vouchers. Depending on the situation, he must: create a new « fiche »; list the new apparatus or new tasks in the « Tableau des risques »; or modify the existing content to make it more suitable. The person responsible for the update of the program has for duty to question the direction and the concerned employee in order to fully understand the changes that need to be brought.

The person responsible of this task must also insure the functionality of the lockout and mitigation program for its establishment specific implementation. He must make sure that each concerned person understands their respective role towards the program.

It is strongly recommended, for the person responsible for the updates, to carefully listen to the employees and consult them frequently in order to know which procedure can or should be improved. This detail promotes the respect and functionality of the lockout and mitigation program within the establishment.

5. References

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