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Construction of Mersin-Adana-Osmanlıye-Gaziantep Hight Standard Railway Line With Supply Of Electromechanical Systems

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PROCEDURE FOR CONTROLLING HAZARDOUS ENERGY

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1. PURPOSE

To determine the basic control requirements for the control and inspection of hazardous energy sources associated with machinery, equipment and processes (MEP) during the execution of the Mersin-Adana-Osmanlıye-Gaziantep High Standard Railway Project activities.

2. SCOPE

It includes all employees (temporary duty, supplier, subcontractor) operating in the Mersin-Adana-Osmanlıye-Gaziantep High Standard Railway Project.

The content of this document does not cover the normal operation and shutdown stages of machinery - equipment.

3. IMPROVEMENT

Persons who detect ambiguity and inconsistency in this document can report their requests and suggestions to the responsible departments by using the "User Feedback Form" in Annex-1.

4. REFERENCES

OHSAS 18001: 2007 Occupational Health and Safety Management System

MAOG-RECU-GN-GNL-IS-GNL-PRG-0008-0 Work Permit Procedure

MAOG-RECU-GN-GNL-IS-GNL-PRG-0003-0 HSE Training Procedure

MAOG-RECU-GN-GNL-IS-GNL-PRG-0002-0 Hazard and Risk Management Procedure

MAOG-RECU-GN-GNL-IS-GNL-PRG-00010-0 Change Management Procedure

OSHA 1910.147 STANDARD(Control of Hazardous Energy, Lockout Tagout)

5. RESPONSIBILITY

5.1 Group Company HSE Coordinator / Manager/Director

Group Company HSE Coordinator / Manager / Director is responsible for controlling the implementation of this document in the projects / businesses operating within the Group Company to which he is affiliated and reporting compliance with the document to the Group Company Board of Directors. Group Company HSE Coordinator/Manager is also responsible for the following:

- Informing the project teams about the hazardous energy control (LOTO) activities,
- Giving the necessary technical support (in theory and practice) for the proper execution of hazardous energy control activities,
- To inform the Board of Directors of the Group Company in order to determine the necessary equipment and technical trainings and to allocate budget and resources in order to manage the activities of control of hazardous energy (tagging, locking, securing and testing),
- Supporting the field checks and related document compliance checks in the field areas,
- It is responsible for sharing the findings and improvement opportunities resulting from audits and controls with the Group Company Management and related projects.

5.2 Project Management:

Project Management is responsible for the implementation of this document in all work sites / activities and ensuring that the subcontractors it works with work in accordance with this document. Project Management is also responsible:

- Providing necessary equipment and technical training to manage hazardous energy control activities,
- In the process of controlling hazardous energy, electrical, mechanical, etc. Identifying other relevant department/unit process owners, transferring their duties and responsibilities,
- Managing the necessary preparation processes within the scope of the business plan / program,
- Prior to the procedures that require more complex hazardous energy control such as Commissioning etc. defining duties and responsibilities by establishing an expert commissioning staff through risk workshop etc. meetings,
- Initiating corrective/preventive action for the identified nonconformities, controlling the actions and the process within the specified periods,
- Following the actions, closing them on time and establishing coordination with the Group Company Management and Group Company HSE Coordinator / Manager,
- Responsible for including subcontractor practices and teams in this document.

5.3 Department / Department Managers / Chiefs

Department - Department Managers / Chiefs are responsible for implementing this document in their work area / activities and ensuring that the subcontractors they work with work in accordance with this document. Department / Department Managers / Chiefs are also responsible for:

- Making the necessary pre-planning regarding the control processes of hazardous energy, taking and following the necessary security measures for the safe completion of the work within the scope of the duties and responsibilities determined by the Project Management through the defined risk control tools,
- From the work of the employees in their teams in accordance with the requirements of this document,
- Preparing Occupational Hazard Analysis (JHA) specific to the relevant activity and monitoring the control measures on-site with field meetings prior to implementation,
- Submitting the records (work permits, commissioning process record table, etc.) created during the control activities of hazardous energy to the Project OHS - E Units,
- Together with the Project OHS - E Manager / Chief, to inform the Project Management for the determination of the necessary equipment (locks, tags, etc.) and technical trainings to manage the hazardous energy control (LOTO) activities, and to allocate budget and resources,
- Responsible for the follow-up of the actions determined during / during the hazardous energy control (LOTO) activities.

5.4 Project / Operation OHS - E Manager / Chief

Project HSE Manager / Chief is responsible for the coordination and monitoring of this document for its implementation in all sites and activities. Project HSE Manager/Supervisor is also responsible for the following:

- Performing hazardous energy control (LOTO) activities in line with this document,
- To inform Project Management and Group Company HSE Coordinator, together with Department / Department Managers / Chiefs, to determine the necessary equipment (locks, tags, etc.) and technical trainings to manage hazardous energy control (LOTO) activities, and to allocate budget and resources,
- Effective implementation and monitoring of risk control tools (work permit system, JHA, TRIC, etc.) together with defined process owners in order to manage the hazardous energy control (LOTO) process,



- Keeping/transferring records of hazardous energy control (LOTO) activities,
- Carrying out HSE hazardous energy control activities for subcontractors,
- Following the actions that occur during the control of hazardous energy (LOTO) activities by establishing coordination with the Project / Operation Management and carrying out the communication and follow-up mechanism with the necessary units to close the actions in a timely manner,
- Prior to the procedures that require more complex hazardous energy control such as Commissioning etc. assisting Project Management through risk workshop etc. meetings,

5.5 Headquarter E&S Manager:

Responsible for managing Infrastructure and superstructure projects regarding environmental and social governance Issues and member of the Executive E&S Committee on behalf of the REC.

5.6 PIU (Project Implementation Unit)

- PIU Physics Engineer who is responsible for supervising health and safety for the Project.
- PIU Department Manager (Superstructure / Civil Engineer) will be responsible for overseeing the Implementation of all health, safety and social measures, as specified within the disclosure package of the Project, and regular reporting to AYGM PIU.

5.7 Executive Environmental and Social Management Committee

- Executive E&S Committee Project Manager (Department Head / Branch Manager /Head of Department) will be ultimately responsible for overseeing the activities undertaken by the AYGM/TCDD specialists (listed below), overseeing the Implementation of mitigation measures and management procedures specified within the disclosure package of the Project, and overseeing the preparation and Implementation of a CESMP, which will be based on this ESMP.
- Executive E&S Committee Environmental, Health and Safety, and Social (EHSS) Manager (Specialist / Engineer) will be responsible for overseeing all matters that relate to environment, health, safety and social aspects of the Project. Also, s/he will be appointed to be responsible for supporting the Implementation of the SEP, by conducting regular consultation with affected communities on any concern regarding the Project. CLOs will also have responsibility for disseminating the Project disclosure package as described in the SEP. They will also conduct regular inspections of records relating to grievances received and their resolution. S/He will report regularly to AYGM PIU.

Further technical staff may be required during the course of the Project, who will be assigned internally by the AYGM, either by means of permanent or temporary basis until the completion of relevant tasks under the Project whilst they undertake their current responsibilities.

6. ABBREVIATIONS & DESCRIPTIONS

Project:MAOG (Mersin-Adana-Osmanlıye-Gaziantep) High Standard Railway Project

Individual Locks:These are the padlocks that are given to the personnel who will work on the project, that can be unlocked with a single key and that the name and registration number of the lock owner (and/or similar) are written on it.

Multiple Lock / Lock Multiplexers:It is an apparatus that allows more than one person to lock when locking is made from a single medium voltage switchgear or local safety switch.

Multi Lock Box: These are the boxes that can be controlled and monitored in group locking (complex LOTO) applications where more than one employee participates.

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Attempt: Attempting to energize or operate a fully Isolated MEP to confirm that the machine, equipment, or process (MEP) has been completely de-energized and rendered Inoperable.

LOTO (LOTO): Lock out – Tag out – Try Out – A primary method used to contain hazardous energy and bring it to zero energy before working on a machine, equipment or process. In order to prevent damage to human, machine and environment as a result of uncontrolled operation of MEP or energizing equipment or releasing stored energy during system commissioning, repair, replacement and general maintenance works; It is the process of cutting the energy of the system and starting it again under the control of the employee or employees who will work in that area.

Energy source refers to the types of energy that must be controlled. Which are ; electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravity, magnetic, water, thermal water - steam, radiation, stored-potential energy and other energy sources.

Labeling and Labeling Apparatus: In LOTO application stages, MEP energy is Isolated by locking and labeling is done with a labeling apparatus in order to inform the employees. On the label are the identification information of the lock and the date the lock was installed on the machine, equipment or process.

Energized / Powered Equipment: Equipment with any energy source, residual or stored energy.

De-Energized It is the state of being removed / purified / separated from all energy sources and in a “zero energy state”. Residual or stored energy is included.

Electrically Safe Working Condition: It is a situation where the conductor or circuit part to be worked on or near is disconnected from electrical parts, locked / tagged according to this procedure, tested to ensure the absence of voltage, and grounded if necessary.

Affected employee: Persons working in that area, machine by locking / tagging as a result of machine, equipment or service activities.

Tasks: To install, assemble, construct, commission, repair, adjust, inspect, expose, troubleshoot, test, clean, disassemble, service, disassemble, inspect, lubricate, maintain or service machinery, equipment and similar tasks on processes (MEP).

JHA: Work Hazard Analysis:

Control: Inspection to assess the sustainability of the insulation.

Locking Device: It is an apparatus used as a key lock or combinations to prevent the energizing of machinery or equipment and to keep the energy isolation device in a safe position.

Locking Registry: It should be recorded by whom, for what purpose and in what way, the locking start and end dates of the lockout equipment, medium voltage breakers and/or local safety switches, the release points of the hazards that may be caused by chemical, thermal, hydraulic, pneumatic, mechanical and other energy sources. received; It is the notebook whose pages are kept under control.

MEP: Machinery, Equipment and Process

Ronesans: Ronesans Holding A.Ş. is a group of companies in Turkey and abroad in which Ronesans Holding A.Ş.'s subsidiaries, subsidiaries and the shareholders of Ronesans Holding A.Ş.

HSE: Occupational Health and Safety and Environment

Pneumatic Test: Air pressure control system.

Zero Energy State: The situation where the MEP is completely isolated / purified from all energy sources and does not contain any residual or stored energy or the potential to reaccumulate residual or stored energy.

STARTR / TRIC: Safety Task Analysis Risk Reduction Talk/Task Risk Identification Card



Hazardous Energy Source:Any electrical, mechanical, hydraulic, pneumatic (air), chemical, radiation, thermal, stored, residual, potential or other type of energy that may harm workers.

Authorized Person: Within the scope of this document, It is the person authorized to isolate and/or control the LOTO system by the project(s) / business(s) for the purpose of controlling hazardous energy.

7. IMPLEMENTATION

7.1. Hierarchy of Risk Controls

While performing their duties on machinery, equipment or processes (MEP), workers are protected from exposure to all forms of existing or potentially hazardous energy to control risk and prevent injury. While performing activities and tasks, accident risks are eliminated in accordance with the following order of priority and activity or are audited in accordance with the risk control hierarchy:

- **Eliminate:** Eliminate exposure to hazardous energy by eliminating the need to work on the MEP through good design.
- **Engineering:** By applying engineering controls, reducing the potential for exposure to hazardous energy while working on the MEP (eg physical shielding / containment, ensuring that all energy isolating devices are interlocked, etc.).
- **Administrative Control / Management:** Administrative controls (eg, conducting risk / work hazard analysis, establishing safe work procedures, implementing a work permit system, training, auditing, etc.). Minimizing the potential for exposure to hazardous energy. In addition, safety warning signs contribute as an important tool to support the effectiveness of each level of the control hierarchy.
- **Personal Protective Equipment (PPE):** Using PPE to minimize exposure to hazardous energy.

7.2. Project Specific Energy Isolation Procedure

Based on the requirements of this document, a written Project / Operation Hazardous Energy Control Procedure is prepared for each Project, specifying how to control hazardous energy sources by identifying them.

Hazardous energy control practices, in particular for businesses, are mostly required in activities carried out by operation or maintenance workers in planned or malfunction situations. During the construction activities, it is a process that should be managed by the relevant Department - Department Managers / Section Chiefs during the commissioning process of the system.

The project hazardous energy control procedure basically includes the minimum information defined below. These are;

- Assigning roles and responsibilities for the program,
- Creating and using the instructions written for MEP specific to the project (including commissioning processes),
- Shutdown, de-energization, energize and determine starting sequences,
- Using the Mandatory Energy Isolation (LOTO) sequence (Section 7.5),
- To train relevant personnel(s) and
- To determine the control steps of the LOTO Implementation System. It is determined how the risk management tools (work permit system, work hazard analysis, TRIC, etc.) will be applied during the control and audit stages.

7.2.1. Hazardous Energy Resources

The hazardous energy sources are as follows, but not limited to those listed:

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- Mechanical energy (motor, winding or chain vehicle, etc.)
- Hydraulic energy (pressurized liquid; oil, water, chemical etc.)
- Pneumatic energy (compressed air or gas etc.)
- Thermal energy (temperature, steam, etc.)
- Electrical Energy
- Non-Ionizing radiation
- Potential energy (mechanically raised equipment, compressed spring, suspended load, etc.)
- Moving / Rotating equipment, parts, etc.

7.3. Training

In projects, the duties and responsibilities of the hazardous energy control program are carried out only by competent persons trained in this field. LOTO education program content includes at least the following topics. These are;

- Hazardous energy control procedure and scope
- Company policy regarding LOTO (Zero Tolerance etc.)
- Mandatory energy isolation order (LOTO)
- Identification / determination of energy sources and measures to be taken against them
- Machine, equipment and process (MEP) specific hazardous energy control procedures / Instructions
- LOTO permit requirements
- How and where to use special locking equipment
- Removal of lockout/tagout devices and
- Other Project-specific program requirements as appropriate and include practical applications.

Authorized persons/employees such as electrical responsables and process insulation officers should be trained by expert person(s) and should be aware of the potential hazards and risks of related activities.

The competence and expertise of each person is evaluated and documented within the scope of "MAOG-RECU-GN-GNL-IS-GNL-PRG-0003-0 Training Procedure". Authorized persons cannot be authorized to undertake the responsibilities defined within the scope of this document in terms of implementation of the LOTO program by the project(s) / enterprise(s) without receiving LOTO training on the control of hazardous energy.

Control of hazardous energy - LOTO trainings are given to all employees at least once a year during the project by experts. Project-specific procedural changes, when employees' place of duty and job procedures change, when program and application deficiencies are determined, accidents that occur during energy isolation and the introduction of new MEPs, etc. Renewal trainings are planned at regular intervals to address if the trainings have not been implemented in the projects at intervals of not more than one year or for a period longer than six months, the requirement for renewal training is evaluated by the Project OHS - E Manager / Chief.

Hazardous energy control training is planned to include all subcontractor personnel who will work directly and/or indirectly in related activities in the project. The training participant list is created by the Project Management, taking into account the requirements in this document.



7.4. LOTO Methods In Energy Insulation

7.4.1. Simple LOTO Method

The simple LOTO method is carried out using a personal lock and Identification tag only in case of simple maintenance or breakdown on the machine, equipment and process (MEP), in cases where all hazardous energy sources will be removed from a single point, working with a single equipment, and a single isolation point. The key remains with the person who will work under the work permit system and other administrative controls defined specifically for the job.

In the simple LOTO method, all authorized persons must follow the “Section 7.5 LOTO Mandatory Energy Insulation Application Steps” and/or the LOTO order in accordance with the MEP-specific hazardous energy control instructions if defined.

By determining the hazardous energy sources that may arise in the stages such as Maintenance and repair etc. to be carried out on critical machinery, equipment and processes in enterprises key points and methods are defined. These requirements can be used in the maintenance and repair phases with the hazardous energy control instructions / cards to be created by the Project specific to the MEP.

7.4.2. Complex LOTO Method

When more than one authorized person is required to carry out a task on a machine, equipment and process (MEP) that has one or more of the following conditions, the complex / complex LOTO method is applied:

- In cases where many energy isolation devices or authorized persons are involved
- When energy isolation application time is extended (e.g. multiple shifts)
- When energy isolation devices are relatively inaccessible or
 - Under complex LOTO methods, a single responsible person is appointed in accordance with the MAOG-RECU-GN-GNL-IS-GNL-PRG-0008-0 Work Permit System Procedure. This person ensures the continuity of the lock application by being authorized to manage all the responsibility and mandatory energy isolation application steps. This process can be accomplished using the multi-lock box (Figure 1).

All keys of the locks for the specified MEP are placed in the multi-lock box. The lock box is locked by the person in charge with a single lock and key. The responsible person keeps the control key under his own control. All authorized persons put their own individual locks on the lock box padlock and keep their locks under their own control.

In order to transfer the control of LOTO / Isolation application to a new responsible person, the first responsible person conveys the current status of LOTO / Isolation, the tasks to be followed and other necessary information.

At the end of the briefing, the newly appointed responsible person places his personal control lock on the lock box and the first responsible removes his own control lock. The control key used in the complex LOTO method is not a master key and cannot be configured in any way to override (eg open) personal/individual locks.



Figure 1 Multi LockBox

Under no circumstances may the personal locks or tags of others be removed, except in the described emergencies and conditions defined in section 7.7.4.

Note: In order to ensure the safety of Authorized persons performing tasks on the MEP, different application conditions of LOTO methods are defined in Section 7.4. All Project Managers are required to evaluate and define Project/Enterprise specific LOTO methods to ensure they fully protect the employees performing their duties on the MEP.

For the complex LOTO method, the mandatory LOTO Implementation steps (Section 7.5) are followed; however, if a designated responsible person (instead of each authorized person) is appointed, he is responsible for checking that all 9 Implementation steps are fulfilled.

7.5. Mandatory Energy Isolation Implementation Steps (LOTO)

The following steps in the entire project outline the mandatory LOTO sequence that must be followed before doing any work on the MEP to ensure that all energy sources are properly isolated and brought into a zero energy state. Mandatory LOTO steps can only be managed by authorized and responsible persons. The mandatory LOTO order applies to all MEP-specific hazardous energy sources. Mandatory LOTO application order is given below. These are;

Step 1 Preparation – Authorized personnel examine the relevant work instructions and provide pre-work information. If there is a hazardous energy control instruction specific to the machine, equipment and process, it examines it and, where applicable, the job description is attached to the LOTO work permit or the ANNEX defined in the MAOG-RECU-GN-GNL-IS-GNL-PRG-0008-0 Work Permit Procedure. – Completes the B Work Permit by processing it into the Registry.

Step 2 Notification – Before performing any work on the machine, equipment and process (MEP), authorized or responsible personnel notify all affected workers in the area that the MEP will be isolated. Affected employees are instructed to stay away from the MEP and not operate the MEP.

Step 3 Disable / Shutdown – Authorized personnel will disable, turn off and de-energize the MEP, following the Project-specific energy isolation program (Section 7.2) or as defined here if a machine, equipment, and process-specific hazardous energy control instruction has been created.

Step 4 Isolation – To control the hazardous energy of the MEP, all energy isolating devices are positioned to properly isolate the MEP. Proper isolation is done using energy isolating devices (eg switches, line valves, blocks, breakers, etc.); MEP operation cannot be done using control buttons (on / off button, emergency stop button, etc.).

Step 5 Applying Locks – One Lock, One Person, One Energy Source – Locks are applied to the energy isolation device. Each authorized personnel working on the MEP is, without

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exception, responsible for affixing their Individual lock(s) and Information tag(s). Locking of each energy Isolating device is done only with the approved locking device. Before starting any work, the required number of lock(s) and tag(s) are prepared. In case of use, Information is entered in the relevant LOTO registry or LOTO work permit.

Step 5 Note: In cases where the energy Isolation device cannot be locked, an Information label is placed on it. Labels are a mandatory visual warning label placed on energy Isolation devices and do not create any physical restrictions on the device to prevent the movement of the equipment. When an Information tag is placed on an energy Isolation device, it can only be removed by the responsible authority and can never be ignored or neglected.

Additional protection measures are used when an Information label is used on an energy Isolation device. Additional protection measures include, but are not limited to, the following: Removing an Isolating circuit element, blocking or monitoring a switch, opening a second disconnect device, or removing a valve handle are all other effective measures required to reduce the chance of the chamber being locked or accidentally energized.

Information labels are not the first method of choice in hazardous energy control. All energy Isolation devices on the non-lockable MEP are identified and replaced as a defect on the Project specific corrective action plan.

Step 6 Zero Energy State – All energy, including stored or residual energy, is drained, blocked, drained or restricted (i.e., a zero energy state must be reached). Where stored or hazardous energy is identified as a source of danger, a measure is taken to eliminate or safely limit the stored or residual energy.

Devices used for the removal of stored or residual energy are designed with a way or method that defines their position and state.

If the reaccumulation of stored energy is likely to reach a hazardous level, verification of the zero energy status is continued until service or maintenance is complete or until such accumulation is no longer likely.

Step 7 Try Out – Authorized personnel shall first make sure that all employees are away from MEP, and then attempt to initiate the normal operational checks to make sure that MEP energy is properly released and cannot be operated. Operational checks shall be returned to neutral or off position after the tryout testing. In case the equipment is operational, it shall be shut down and the supervisor shall be notified.

Step 8 Perform Task

Step 9 Inspection and Restore – Before restoring energy to the MEP, authorized personnel perform the following steps:

- Physically checking the area in or around the MEP to ensure that all vehicles are removed and guards and other safety devices are in place.
- To inform all employees who will be affected by the restoration of energy,
- Making sure that all employees are away from the MEP,
- Removing all locking devices and tags from energy sources,
- Bringing all Isolation devices to the “On” position or to the normal operating position,
- Confirming that the MEP is operating properly, informing the supervisor and equipment operator that the task has been completed and control of the MEP has returned to the project,
- making sure that normal operation of the MEP can begin,
- Never remove another employee's individual locks or tags,
- Filling the registry and/or work permit where applicable,



- To hand over the MEP responsibility back to the project,

Step 9 Note: MEP with damaged or lost components is kept locked by insulating it against all kinds of dangers and risks. The lock and tag are placed on the energy isolation devices by the responsible authority. This is used as a warning to other users / operators, to prevent uncontrolled MEPs from being run. The energy isolation device is kept in the off position.

7.6. LOTO Implementation Process Work Permit System

A work permit system is defined in accordance with the MAOG-RECU-GN-GNL-IS-GNL-PRG-0008-0 Work Permit System Procedure to ensure that machinery, equipment or processes are removed / free from all hazardous energy sources and to complete energy isolation and applied. Authorized (Supervisor, Manufacturing Engineer, Technician, etc.), Authorized Person to Perform the Work (Person who Executes the Work), Area Responsibilities (MAOG Project Construction Site) for the stages of authorization, implementation and closure by the Project Management through the relevant section chiefs. Chiefs / Engineers / Project Managers) and Work Permit Coordinator are defined.

The work permits to be created for the control of hazardous energy contain at least the following information. These are;

- Isolation date/time
- Names / signatures of the employee(s) performing the isolation
- Isolation number
- Relevant work permit / work hazard analysis reference number
- Type of isolation (electrical, mechanical, etc.)
- Isolation method
- Relevant isolation number
- Marking
- In which position the isolation was left (open, closed, etc.)
- Isolation removal (removal or recovery)
- Isolation removal date / time
- Name(s) / signature(s) of the employee(s) who removed the isolation

7.7. Special Cases

7.7.1. Intermittent Operation of MEP

In cases where LOTO devices need to be temporarily removed from energy isolation devices and the MEP needs to be partially or completely re-energized to test, fail, or locate the MEP or a component inside, the application step sequence listed in Section 7.5 (Step 9, Inspection and Restore) loading) is followed. When the test is complete, it is isolated in accordance with MEP Section 7.5 (Steps 1-9) and/or MEP-specific instruction (TEKP) if found.

Additional measures apply when clauses in Section 7.5 cannot be enforced. Adjusting, editing, etc. for routine tasks. A risk analysis is performed and used to develop control procedures. In non-routine activities, an LOTO permit is used to identify and control risks.

7.7.2. MEP Handover and Shift Changes

In order to maintain the zero energy state, necessary arrangements are made on the logbooks for a regular transfer of energy isolation status or device protection for the employee(s) authorized or responsible for shift changes. This is necessary to prevent the MEP from being compromised by



unexpected energizing or starting up or being de-energized as a result of this shift change or other duty interruption.

In case of a change of employees due to employee change, shift change, the employee removes his/her own lock and tag on the registry with the knowledge of the relevant process manager, and the employee who will continue to work puts on his/her own lock and tag. The control authority is locked until all work is done.

7.7.3. Subcontractor Coordination

Project management ensures that the contractors and subcontractors work in accordance with the requirements of this document in the tasks they will perform on the MEP in the Project. Project Management coordinates the relevant energy isolation application steps of its contractors and subcontractors. It is the Project management's responsibility to ensure that the Contractor and its employees understand the document requirements and work accordingly.

7.7.4. Removing Locks and Tags

A special instruction is created on the Project side when the employees do not remove their locks and tags (in case they are not in the work area, forgot, etc.). If the employee is not in a position to remove the lock and tag, the supervisor/supervisor of the employee will try to contact the employee, have him contact the Project to remove the locks and tags.

If the employee cannot be reached, the supervisor / supervisor, together with a specialist staff, checks the work area to ensure that the MEP has been cleared and the task has been completed. On completion, the Inspector follows step 9 (Inspection and Restore) in Section 7.5, then the Inspector can remove the lock and tag from the energy isolation device with the approval of the most senior employee in the Project.

The supervisor runs and tests the MEP to ensure the safe operation of the MEP. Before the start of the next work shift, the employee who does not remove their locks and tags is informed of this action. When an LOTO lock has to be cut and destroyed, a report is presented to the Project manager and a detailed accident investigation is carried out as a "High Potential" accident.

7.7.5. Change Management

All Project Management establishes a system to manage risks associated with the replacement or installation of existing or new machinery, equipment and processes (MEP). This system is used to revise existing drawings or develop new drawings (eg Electrical diagrams / Piping and Instrumentation Diagram (P&ID)); hazardous energy risk analyzes and energy isolation procedures, mission trainings, etc. Addresses the impact of change on Project / Operational safety to include the needs of

Change management applications are managed in accordance with the MAOG-RECU-GN-GNL-IS-GNL-PRG-00010-0 Change Management Procedure.

Specific to businesses, MEP-specific hazardous energy control instruction and training is completed prior to putting all new or modified MEPs into operation.

7.8. Machinery, Equipment and Process Energy Isolation Device Features

The MEP is clearly labeled in a weatherproof, standard and permanent format with some information and criteria for the isolation points (including main and local disconnectors) identified on them. This label should contain at least the following information:

- Isolation device name and function (e.g. identification of the circuit or system it controls)
- Name, signature and telephone number, if any, of the isolation officer
- Energy type and size (e.g. hydraulic line, main switch, compressed air line)

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- Labeling date
- Insulation number
- Description of the hazard

Labels are warning about the hazardous situation. All labels have 'Danger, Do Not Operate, Danger, Out of Service' or similar warning statements on them.

Energy Isolation device criteria are as follows. These are;

- It is located as close to the event as possible.
- It is designed to protect the worker responsible for shutting down and locking out the energy source from contact with energized electrical components, arc flash hazards and other energy hazards of the MEP.
- It should be able to be securely locked as a stand-alone and be applied with a multi-lock when a multi-padlock is required.
- All energy isolation devices that do not meet the above requirements will be identified and included in the Project / Business specific corrective and preventive action plans. All energy isolation devices must meet these minimum requirements.
- Arc flash resistant main switches are included.

7.9. Individual Lock and Tag Features

Lockout and tagout devices are defined separately and cannot be used for any other purpose. Lockout and tagout devices meet the following requirements:

Durable – Lockout and tagout devices are able to withstand the environment to which they are exposed

Standardized – Lockout and tagout devices are standardized in color, shape or size on site.

Substantial – Lockout devices shall be substantial enough to prevent easy removal

Unique – Locking devices must have different keys and not have a dual or second-party master master key.

Identifiable – Labels employee locks with the following information:



Figure 2 Personal Lock

- Type of task
- Time and date of lock application
- Name of the employee who installed the lock

Alternatively, where multiple locks / multiplexers are installed and the LOTO process is effectively completed, the above information can be pasted on the switch or valve using:

- Related work permit
- An appropriate warning notice containing this type of information

Where the energy source cannot be locked, an information tag can be used on a temporary floor or as a separate warning device. Under these conditions, the label contains the information given above and in addition:



Figure 3 Multi Lock / Multiplexer

i) The employee responsible for enforcing the tag will be the only person authorized to remove this tag and re-energize the MEP. MAOG-RECU-GN-GNL-IS-GNL-PRG on the label that the label can clearly be removed only by an authorized (identified on the label) person and any employee other than that person attempts to remove the label and re-energize the MEP. -0006-0 It is stated that it will be considered as a disciplinary offense within the scope of OHS - E Disciplinary Procedure (Destroying / deactivating security equipment).

ii) Under these circumstances, the affixing of a label will be the subject of a special "Hazardous Energy Risk Assessment" and a "Work Permit" and will need to be completed.

iii) Hazardous Energy Risk Analysis and Work Permit is placed on the switch / valve on which the label is placed.

7.10. Relation with Other Procedures

If this procedure conflicts with other OHS - E Procedures, is below the standards, and contains less precautions, the provisions of this procedure are applied. Provisions of other procedures that are inconsistent with this procedure, are substandard and contain less precautions are void.

8. Monitoring, Assurance and Verification

Key success indicators (KPIs) of this procedure will be monitored, verified and evaluated by the relevant parties in accordance with their responsibilities set forth in the E&S Governance document, within the scope of the MAOG-RECU-GB-GNL-IS-PRG-0007-0 HSE Monitoring, Assurance and Verification Procedure

