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ENERGY ISOLATION (EIP) & LOCKOUT/TAGOUT (LOTO) PLANNING GUIDE

A PRACTICAL CHECKLIST & TEMPLATE EXAMPLE FOR SAFE ISOLATION OF ENERGY SOURCES.

OPERATIONAL ASSURANCE GROUP
SPECIALISTS IN SAFE SYSTEMS OF WORK & INDUSTRIAL RISK CONTROL

Energy Isolation (EIP) & Lockout/Tagout (LOTO) Planning Checklist

A Practical Checklist & Template for Safe Isolation of Energy Sources

Operational Assurance Group

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1. Executive Summary

This document provides a practical, checklist-based approach to planning and implementing Energy Isolation (EIP) and Lockout/Tagout (LOTO) within industrial environments.

Developed by Operational Assurance Group, it is designed to support safe isolation of hazardous energy sources, ensuring that work is carried out without risk of unintended energisation or release of stored energy.

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2. Purpose

- Provide a structured approach to energy isolation
- Prevent uncontrolled release of energy
- Support compliance with UK legislation
- Enable safe maintenance and intervention activities
- Deliver a practical, site-ready tool

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3. Our Mission

“To protect people and businesses by delivering practical, audit-ready safe systems of work and risk control solutions that enable confident operational delivery.”

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4. Core Principles

Safety as Standard

No work proceeds without effective isolation of hazardous energy.

Built for the Real World

Designed for use in live operational environments.

Compliance Without Complication

Clear, practical controls without unnecessary complexity.

Operational Alignment

Reflects real plant, equipment, and process conditions.

Audit-Ready by Design

Structured, traceable, and verifiable controls.

Clear & Direct Communication

Simple and understood by all involved personnel.

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5. What is Energy Isolation?

Energy Isolation is the process of controlling all energy sources to ensure equipment is in a safe, de-energised state prior to work.

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6. Identification of Energy Sources (Checklist)

Before isolation, identify all potential energy sources:

Electrical

- Mains power
- Stored electrical energy (capacitors, batteries)

Mechanical

- Moving parts
- Stored kinetic energy (springs, flywheels)

Hydraulic

- Pressurised fluids
- Accumulators

Pneumatic

- Compressed air systems
- Residual pressure in lines

Chemical

- Reactive substances
- Pressurised or hazardous chemicals

Thermal

- High or low temperature systems
- Residual heat

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7. Isolation Hierarchy

Apply the hierarchy of isolation:

Physical Isolation (Preferred)

- Disconnection
- Blanking / spading
- Removal of components
- Double block and bleed

Procedural Isolation (Where physical not possible)

- Locking off switches
- Control system isolation
- Administrative controls

Always prioritise physical isolation where reasonably practicable.

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8. LOTO Implementation Checklist

- Isolation points identified and labelled
- Isolation method confirmed
- Locks applied by authorised personnel

- Tags clearly displayed (name, date, purpose)
- Group lockbox used where required
- Access controlled and recorded

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9. Verification – Prove Dead / Zero Energy

Verification is critical before work begins:

- Test for absence of voltage (approved tester)
- Confirm mechanical parts cannot move
- Release stored energy (bleed, vent, discharge)
- Try-start or functional test where appropriate

No work starts until zero energy is confirmed.

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10. Dynamic Risk Considerations

Reassess if:

- Isolation integrity is compromised
- New energy sources are identified
- Work scope changes
- Environmental conditions change

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11. Reinstatement Controls

Before re-energisation:

- Work area cleared
- All personnel accounted for
- Guards and safety devices reinstated
- Tools and equipment removed
- Locks removed by person who applied them
- Controlled restart procedure followed

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12. Interface with Permit to Work (PTW)

Energy isolation must align with PTW systems:

- Isolation referenced within permit
- Permit issuer verifies isolation
- Permit closure linked to safe reinstatement
- Clear communication between permit roles

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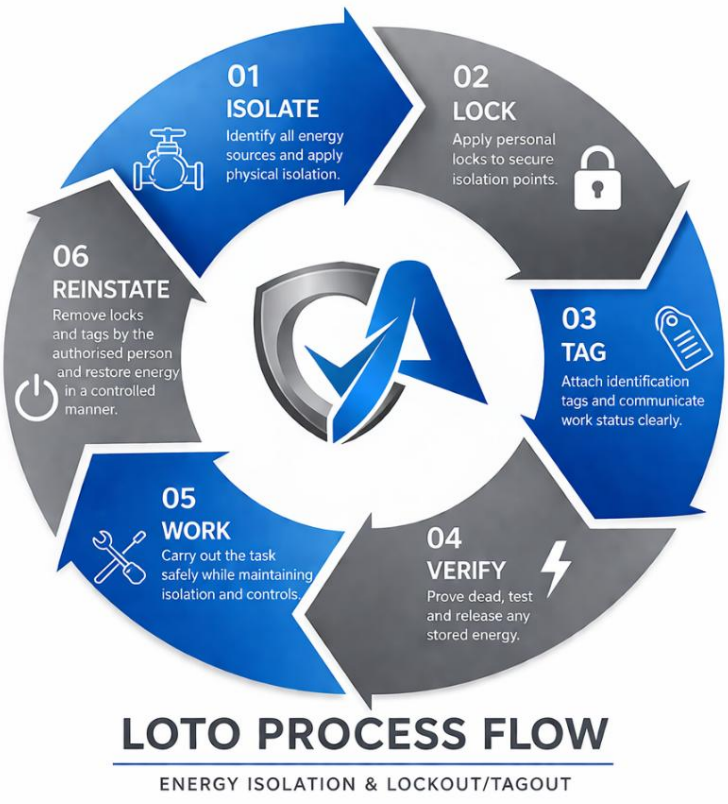
13. Visual LOTO Controls

These visual tools support consistent application of energy isolation controls and reinforce understanding across all levels of the workforce.

13.1 LOTO Process Flow



13.2 Group Lockbox Workflow

[Identify Isolation Points]
↓
[Apply Isolation Locks]
↓
[Keys Placed in Lockbox]
↓
[Each Worker Applies Personal Lock]
↓
[Work Undertaken Safely]
↓
[Remove Personal Locks]
↓
[Final Key Release & Reinstatement]

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14. Simple LOTO / EIP Template

Task: _____

Location: _____

Date/Time: _____

Supervisor: _____

Energy Sources Identified

- _____
- _____

Isolation Method

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LOTO Applied By

Name: _____

Verification Completed

☐ Electrical proven dead ☐ Stored energy released ☐ Mechanical movement prevented

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Permit Reference (if applicable)

Reinstatement Confirmation

☐ Area safe ☐ Personnel clear ☐ Equipment ready

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15. UK Regulatory Framework and HSE Alignment

Health and Safety at Work etc. Act 1974 (HSWA)

- Duty to ensure safe systems of work

Management of Health and Safety at Work Regulations 1999 (MHSWR)

- Requires risk assessment and control measures

Provision and Use of Work Equipment Regulations 1998 (PUWER)

- Requires safe isolation of equipment

Electricity at Work Regulations 1989

- Requires systems to be made dead and safe

Pressure Systems Safety Regulations 2000 (PSSR)

- Controls risks from pressurised systems

HSE Guidance

- HSG253: Safe Isolation of Plant and Equipment
- HSG65: Managing for Health and Safety

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16. What Sets Operational Assurance Group Apart

Practical Delivery

Usable tools for real operations

Audit-Ready Outputs

Structured and compliant documentation

Industry Expertise

Experience across high-risk sectors

Continuous Improvement

Keeping systems current and effective

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17. Conclusion

Effective energy isolation and LOTO are critical for preventing serious incidents.

By applying structured, practical controls, organisations can ensure safe intervention and maintenance activities.

Operational Assurance Group provides the expertise to deliver this safely and effectively.

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18. Contact

Operational Assurance Group Specialist Consultancy in Safe Systems of Work & Industrial Risk Control. For further information or support, please get in touch.

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