



Los Lunas Data Center

Site Specific

Energy Marshal Program

1.0 Document Revision History

Rev	Issue Date	Pages	Reason for Revision	Author	Approved By
001	11.18.22	Entire Document	Initial Draft	Sammy Chumpolpakdee	Tim Opell
002	3.1.23	Page 18	Adding formal documented auditing process for LOTO	Sammy Chumpolpakdee	Tim Opell
003	3.30.2023	Page 6	Personnel Changes	Sammy Chumpolpakdee	Tim Opell

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3.0 Introduction

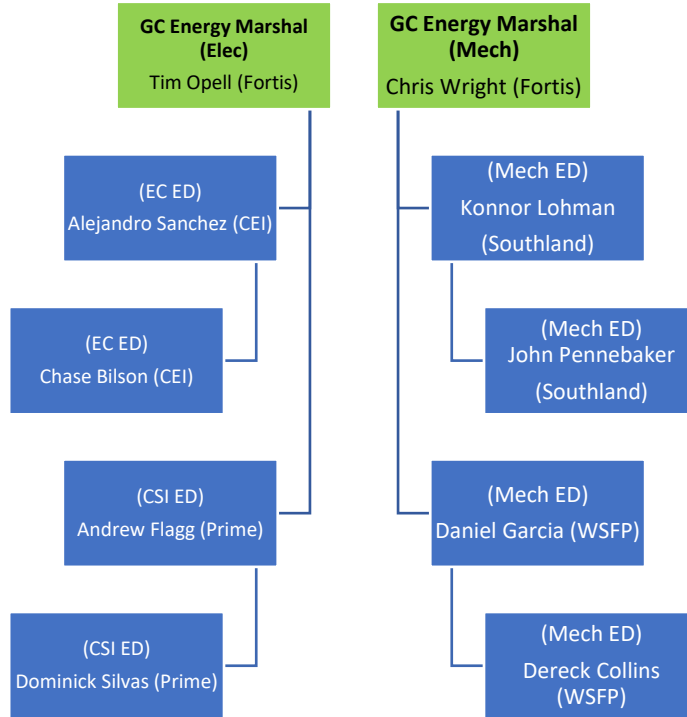
The purpose of this document is to outline the site-specific program requirements and minimum expectations beyond the statutory, regulatory and industry specific standards required for the Energy Marshal Program for VLL/VCN New Builds and Retrofit Projects.

This site is committed to fostering and promoting the mission of an incident/injury-free environment. This program is designed to provide a methodical approach to accomplishing our mission. This calls for maintaining full accountability and positive control of all forms of hazardous energy while systems are actively under GC/MEP Trade Partner control. We will strive to continually improve our processes and apply industry best practices including pioneering our own best practices. As improvements are recognized, changes will be made to the safety goals and EM program.

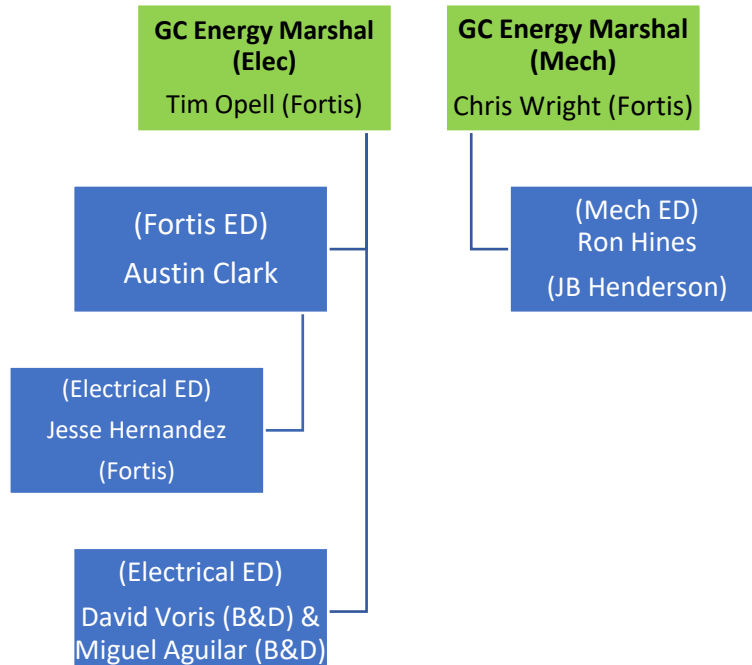
This document shall be reviewed annually by management, site energy marshals and safety management. Any revisions will be documented, supplemental training will be required to communicate all changes.

4.0 Organizational Charts

4.1 New Builds Project



4.2 Retrofit Project



5.0 Reporting, Communication, and Training

5.1 Communication Groups

Communication is a key component of our teams' success. Teams will utilize various platforms to communicate scope updates, outages, testing announcements, initial incident reporting, etc. Fortis will establish specific WhatsApp chat groups for both New Build and Retrofit projects for logistics and energy marshal specific comms. In addition to the WhatsApp chat groups, project specific Workplace groups will be utilized to communicate to ICM/Meta teams, Fortis project teams, and trade partners.

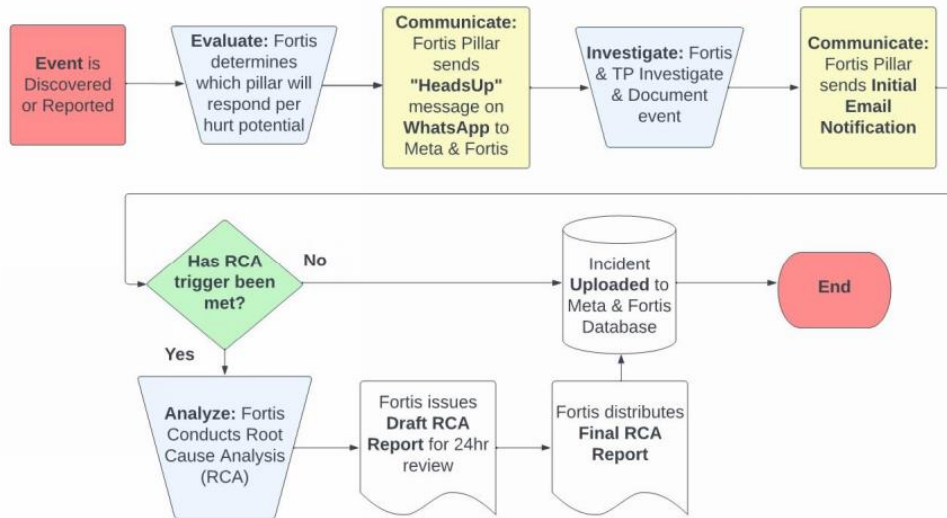
Examples of various communication platforms include, but are not limited to:

- **WhatsApp**- Project specific logistics, VCN Heads-up, VLL Retrofit Heads-up, Energy Marshal Groups (Electrical and Mechanical)
- **Email**- Initial incident notification
- **Workplace Chat Groups**- Project specific groups
- **Procore**- Project database; used to document project meetings, progress, daily logs, and comms for incidents & RCAs.

5.2 Incident Reporting and Documentation

This document references the established site incident protocol. All incidents that occur onsite will reference to the Event Matrix developed by Fortis. (See Appendix D)

Flowchart for Notification, Investigation and Analysis of Any Incident Type

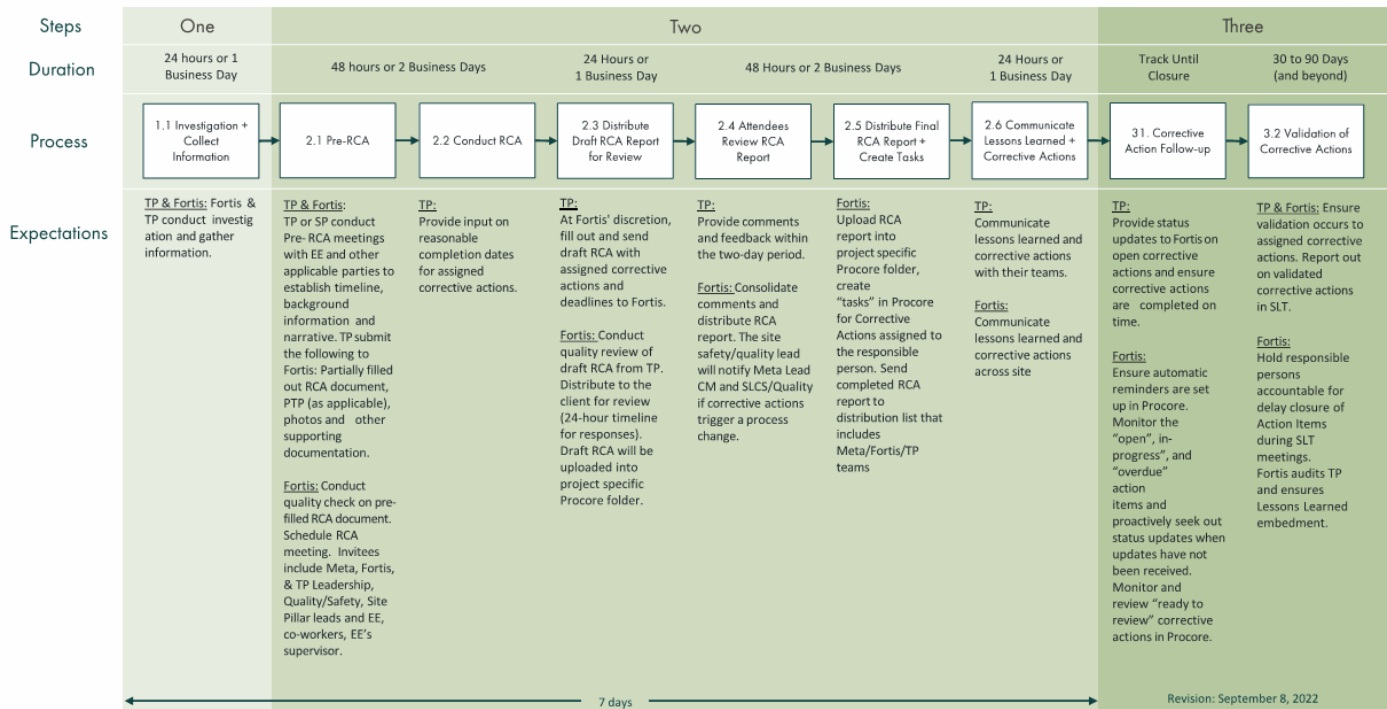


5.3 Incident Investigation and Review

First Aids/Recordables/Near Misses/Impact to Facility and Asset Damage

An Incident Review (i.e. Root Cause Analysis) will be conducted after an incident investigation if the event has met the criteria outlined by the site’s Event Trigger matrix. This is to determine the root cause of the incident and to facilitate continuous improvement and corrections of existing hazards or risks in processes. In attendance, will be the site Energy Marshal, Trade-partners’ and Fortis’ superintendent, project manager, safety professional, injured worker(s), other involved workers, union stewards and witnesses. The Root Cause report (or Causal Analysis) will be communicated to the project team and used as lessons learned in toolbox talks, safety meetings, and Red/Amber/Green/Health Alerts and reported out in applicable Energy Marshal meetings.

RCA Lifecycle Guideline Flow Chart



5.4 Meetings

Fortis and trade partner Energy Marshal(s), deputies, management, and safety representatives shall participate in mandatory re-occurring meetings. An agenda will be shared including the following topics, but are not limited to: Safety moment, pirate alerts, current activities and risk associated with the scope of work, upcoming initiatives related to the group, upcoming training opportunities, etc.

- Global Electrical Safety Working Group (Monthly)
- Site Energy Marshal Working Group (Monthly; 2nd Tuesday of every month)
- Site pre-job briefs prior to any FTE or vendor activities

5.5 Training

Training is an important component of the Energy Marshal program. Fortis will facilitate site specific training requirements for all trade partners. All trade partners shall have the following site-specific training prior to working around electrical or mechanical systems that have the potential for release of hazardous energy:

- Arc Flash Awareness (Fortis provided)
- Lock Out/ Tag Out (Fortis provided)
- Hydronics Awareness Training (Fortis Provided)
- NFPA 70E 4-Hour minimum (**Employee Responsibility**)

Refresher courses will be required yearly or when the course standards spell out when the specific training expires. Training records shall be submitted by all trade partners to Fortis in the form of a PDF document to the Fortis safety team (vllsafetyteam@fortisconstruction.com).

Hard hat stickers will be handed out signifying the completion of the specific training and will be displayed on all workers' hard hats.



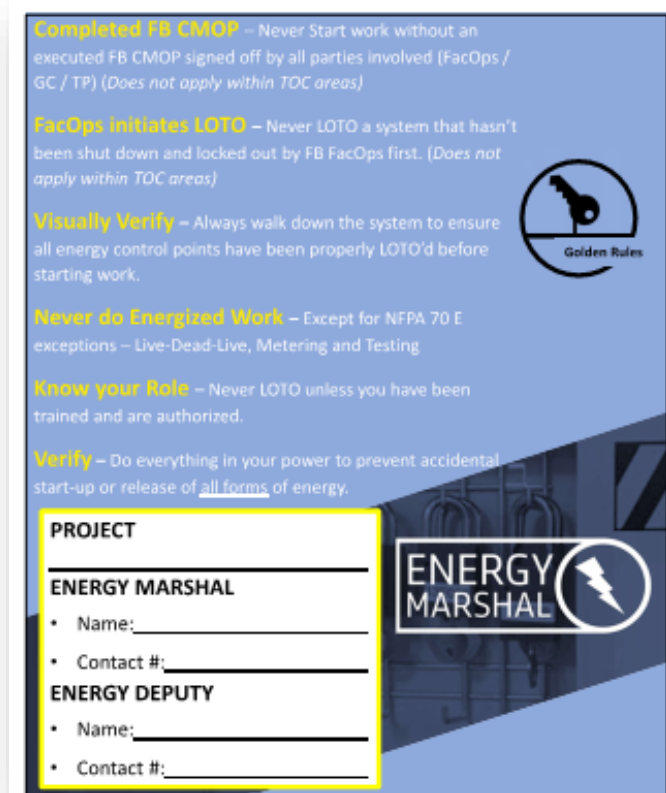
6.0 Energy Marshal Program – Golden Rules

Fortis New Builds and Retrofits Leadership is committed to fostering and promoting the mission of an Injury Free Environment on our jobsites. This calls for the elimination of unsafe acts, unsafe conditions, and the prevention of near-miss incidents by putting people first in all decisions.

This is to be accomplished with:

- Collaboration and accountability between the Owner, Fortis, and trade partners
- Personal commitment and leadership by all Fortis employees
- Ownership by all craft workers
- Engagement and Empowerment for all personnel towards well-being and safety

All Fortis supervisors have the authority and responsibility to take immediate action to correct hazardous conditions and practices without concern for the costs. Each Fortis supervisor has the authority and duty to stop work if hazards to health or safety to workers present imminent danger. All personnel on a Fortis project are empowered and expected to refuse to perform unsafe work and to stop work or escalate their concerns even when observing risky or unsafe conditions or behaviors.



Completed FB CMOP – Never Start work without an executed FB CMOP signed off by all parties involved (FacOps / GC / TP) (Does not apply within TOC areas)

FacOps initiates LOTO – Never LOTO a system that hasn't been shut down and locked out by FB FacOps first. (Does not apply within TOC areas)

Visually Verify – Always walk down the system to ensure all energy control points have been properly LOTO'd before starting work.

Never do Energized Work – Except for NFPA 70 E exceptions – Live-Dead-Live, Metering and Testing

Know your Role – Never LOTO unless you have been trained and are authorized.

Verify – Do everything in your power to prevent accidental start-up or release of all forms of energy.


PROJECT


ENERGY MARSHAL

- Name: _____
- Contact #: _____

ENERGY DEPUTY

- Name: _____
- Contact #: _____

ENERGY MARSHAL 

Golden Rules 

Energy Marshal Golden Rules

7.0 Energy Marshal/Deputies – Roles & Responsibilities

Energy Marshals are to oversee all energy management activities onsite and to ensure that all personnel are abiding by the proper policies and procedures set forth by the Energy Marshal Program at the Los Lunas Data Center. Energy Marshals and Energy Deputies will be designated, trained, authorized and integral to any control of hazardous energy (CoHE), Lock Out Tag Out (LOTO), and Transfer of Custody work being performed. Both Fortis and trade-partners will designate Energy Marshals and Energy Deputies (Mechanical, Electrical trades and Fortis) according to both the Meta New Builds and Retrofits Energy Marshal guide. Energy marshals and deputies will be designated for electrical and fluid hazardous/potential energy according to their expertise and role. The golden rules poster will be understood and posted; and EM and EDs shall have stop work authority.

Management is to ensure that this policy is always enforced, on this project, and administrative offices.

Supervision and Foremen are to ensure that this policy is enforced on this project, as well as, to ensure that personnel have been trained in this policy.

Safety Management shall annually review and revise this policy as necessary and assist in the implementation and enforcement of this policy when required.

Safety Professionals are to ensure that employees have been trained and assist onsite management and supervision to ensure enforcement of this policy and to be engaged in these processes.

8.0 Electrical Safety

Project Trade Partners must initiate, maintain, and enforce a Lockout/Tagout (LOTO) program that will effectively protect all affected personnel from all recognized energy sources. The use of a tag alone is not allowed unless approved by the Fortis Energy Marshal, Trade Partner Energy Marshal and owner.

All authorized and affected employees must be trained if their scope of work puts them into the purview of the Trade Partners LOTO program. Trade Partner shall maintain training records for all authorized and affected employees. All LOTO activities require a permit and will accompany a Pre-Task Plan.

It is Fortis policy that no energized electrical work shall be performed on this project. However, if energized electrical work cannot be avoided, a Meta Energized Electrical Work Permit shall be required. The permit must be approved by Fortis prior to submitting to the Data Center Campus Facility Manager (DCCFM) for authorization.

8.1 Quarterly Assured Grounding Program for Cords and Receptacles

All temporary-wiring installations shall incorporate ground fault protection for personnel. All 125-volt, single-phase, 15-, 20-, and 30-ampere receptacle outlets that are not a part of the permanent wiring of the building or structure shall have ground fault circuit interrupter protection. In addition, if a permanent receptacle (“house power”) is being used in the process of construction, then ground fault circuit interrupter protection must be provided, meaning that if Fortis or a trade-partner is plugging a tool or extension cord into “house power”, that a GFCI splitter or GFCI “pigtail” must be utilized preferably at the location of the permanent receptacle. Additionally, cords will undergo a quarterly assured grounding program where passing inspection is marked using color coded tape wrapped around both ends of a cord.

Working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a trip hazard to employees. If possible, cords shall be elevated overhead to avoid equipment or material contact or otherwise protected by routing along walls and perimeters or protected by cord covers.

All extension cords use for construction must be 12 gauge or thicker. Damaged extension cords will be tagged and removed from site; repair is not allowed. Damaged tool cords should be replaced with manufacturer’s parts rather than repaired with aftermarket UL listed cord caps. Licensed electricians can repair or make up equipment SO cords and plugs.

Each trade partner will mark all cords with their company name to identify ownership.

9.0 Vendor Accountability and Trade Partner Responsibilities

In order to increase predictability in vendor scope execution and ensure the reduction/elimination of incident risk and exposure to hazardous energies, this site shall utilize our Go/No Go OFCI Vendor checklist. Vendors that are forecasted to perform work on our site shall receive this form as part of their minimum requirements prior to coming onto site. Submission of this form is a requirement prior to starting work. Additional site-specific training spelled out in the form further supports the site-specific minimum requirements for our program. Please reference the end of this document for the OFCI Vendor Go/No Go Checklist. (See Appendix C)

Site Program Reference Appendices

Appendix A: Los Lunas Data Center Lock Out Tag Out Program

Appendix B: Los Lunas Data Center Water Marshal Program

Appendix C: OFCI Vendor Go/No Go Checklist

Appendix D: Event Matrix: Best Known Method (BKM) Playbook

Appendix A

Los Lunas Data Center LOTO Program

Purpose

The purpose of this program is to align Fortis Construction Inc. with the current best practices of the MEP Contractor Trade Partners' policies, and to ensure that field implementation of the lockout/tagout program is in line with the latest version of NFPA 70E – Standard for Electrical Safety in the Workplace, and OSHA CFR 1926 Subpart K. Proper lockout/tagout (LOTO) practices and procedures safeguard workers from the exposure to the release of hazardous energy. Fortis Construction Inc. and each Trade Partner will train their employees to ensure that they know, understand, and are able to follow the applicable provisions of the hazardous energy control procedures. Employees will be trained in the purpose and function of the energy control program and have the knowledge and skills required for the safe application, usage, and removal of the energy control devices.

Scope

This document applies to all Fortis Construction Inc. and MEP Trade Partner employees who may be exposed to hazardous energy during service or maintenance work. Vendors who are coming onsite to perform any work will be required to submit an LLDC OFCI Vendor Go-No Go Checklist prior to arrival for review by the Energy Marshal Team, Trade Partners, and the appropriate Fortis POC.

Policy

Prior to starting any task, ensure that a Pre-Task Plan has been completed and that all employees are aware of the scope, hazards, and protective measures to be taken to have zero incidents. In addition, the Electrical and/or Mechanical Trade Partner site specific LOTO policy should also be referenced when performing any lockout/tagout procedures. Energized work will not be permitted unless in the case of testing or diagnostic procedures for specific equipment.

Responsibilities

Energy Marshals are to oversee all energy management activities onsite and to ensure that all personnel are abiding by the proper policies and procedures set forth by the Energy Marshal Program at LLDC.

Management is to ensure that this policy is always enforced on this project, and administrative offices.

Supervision and Foremen are to ensure that this policy is enforced on this project, as well as, to ensure that personnel have been trained in this policy.

Safety Management shall annually review and revise this policy as necessary and assist in the implementation and enforcement of this policy when required.

Safety Professionals are to ensure that employees have been trained and assist onsite management and supervision to ensure enforcement of this policy and to be engaged in these processes.

Definitions

Affected employees: An employee whose job requires them to operate or use a machine or equipment on which service or maintenance is taking place under lockout tagout.

Authorized employee: An employee who apply a lockout/tagout system in or to perform servicing or maintenance on the machines, equipment, or system(s).

Energized: Equipment or machinery is attached to an energy source or containing residual energy of some kind (electric, hydraulic, steam, water, etc.).

Energy isolating device: A device that physically prevents the transmission of release of energy such as a circuit breaker, a disconnect switch, etc.

Energy source: Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other form of hazardous energy.

Lockout: The placement of a lockout device on an energy isolating device ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout device: A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energizing of a machine, equipment, or system(s).

MEP: Mechanical, Electrical, and Plumbing trades.

MOP: A Step-by-step process outlining the procedures of an MEP activity which involves a switching of energy of could negatively affect the owner.

PTP: Pre-task plan.

Servicing and/or maintenance: A workplace activity such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. where an employee may be exposed to the unexpected energization or startup of the equipment or release of hazardous energy.

Identifying Lockout/Tagout Equipment

Authorized employees using lockout/tagout devices and equipment must ensure that the equipment clearly indicates the identity of the individual who has attached it. If handwriting the identification required on the tag, it must be legible and capable of remaining visible and legible during the entire time that the equipment is intended to be used.

The Electrical Trade Partners shall identify the lockout device used for certain activities by color, indicated as follows:

Yellow – Commissioning Lockout Device – Keyed Alike

Red – Personal Lockout Device – Keyed Differently

The Mechanical/Plumbing Trade Partner shall identify the lockout device used for certain activities by color, indicated as follows:

Blue – Control Lockout Device – Keyed Alike

Combination locks shall not be permitted.

Note – Facility Operations will use separate lockout devices for procedures with their own tags, lockout boxes, etc., and may also utilize a red color lockout device.

Preparing for Lockout/Tagout

Authorized employees engaging in a lockout/tagout process must first identify the equipment, machines, or systems they will be locking and tagging out using the most up to date one-line diagrams, submittals, DCD's, RFI's, drawings, panel schedules, and plan references, if applicable. This information shall be communicated with the equipment owner, and mechanical, electrical, and plumbing trade supervision and reviewed prior to the lockout/tagout taking place, as well as ensuring this is included on the daily work plan, PTP, or MOP. Once these systems have been identified they must identify and account for all types of energy sources that are involved. Authorized employees must have accurate knowledge of the type and magnitude of the energy sources and their hazards. Any energy source that is capable of being locked out must utilize a lockout device.

Preparing and Shutting Down Equipment

Locking and Tagging:

For Fortis personnel and Vendors, Authorized employees engaging in a lockout/tagout process shall first contact the Energy Marshal or similar person for MEP Trade Partners, to obtain and check out an appropriate lockout device(s). A Smartsheet checklist shall be completed and filed with the Energy Marshal prior to placing the lockout device(s).

Note - MEP Trade Partners may have policies and procedures in place that will supersede and be more restrictive than this minimum safety policy.

Authorized employees engaging in a lockout/tagout process must notify all affected employees that the equipment or system will be involved in a lockout/tagout. These notifications to affected employees shall be done by completing the following steps:

Ensuring a tag is placed at the location of the lockout device(s) on the equipment or machinery, nearest the point from which it is operated.

Persons(s) performing the work, or the responsible supervisor or equipment owner, must also notify affected employees verbally once they begin the lockout/tagout process.

Following the notification to affected employees the machines or equipment shall be shut down or turned off using the procedures that have been established for that equipment or machinery.

A zero-voltage verification (Live-dead-live) shall be performed, and all personnel involved in the lockout/tagout process shall be available to witness this procedure from the appropriate boundary. This procedure shall be performed by the Electrical Trade Partner, Fortis shall not rely upon verbal communication.

Once the equipment or machinery is safely shut down or turned off, lockout and tagout devices shall be placed on each energy isolating device by the authorized employee(s). Lockout devices must be attached to ensure that the energy isolation devices are held in an "off" or "safe" position.

Lockout tags shall be attached to clearly communicate that the removal or operation of the energy isolation device is strictly prohibited. These tags shall be legibly dated and signed by the authorized employee(s) applying them and shall include pertinent contact information. This information must remain legible and in place for the entire lockout/tagout of the equipment, or systems.

Stored Energy

All stored or residual energy in batteries, inverters, uninterruptible power supplies, generators, etc. shall be accounted for and relieved, disconnected, restrained, or otherwise rendered in a safe condition.

If a possibility remains that stored energy may reaccumulate to a dangerous level, verification of isolation must continue until it no longer exists, or the service or maintenance has been completed.

Verification of isolation:

Before the actual work can progress authorized person(s) must verify that the isolation and de-energization of the equipment, machines, or systems has been successful.

Re-energizing equipment

Once the work has been completed authorized employees must also notify all affected employees that they are coming out of the lockout/tagout, and that equipment will be re-energized. This notification must take place before the removal of the lockout devices and tagging equipment.

Before the Lockout/Tagout device is removed and energy is restored to the equipment, machines, or systems the authorized person must take the following steps:

The authorized employee shall ensure the work area around the equipment, machines, or system have all tools and nonessentials removed and that machines, equipment, or systems are operationally intact and ready to be re-energized.

Next the work area shall be arranged with appropriately distanced approach boundaries and barricades with proper signage to ensure that all employees working in the area are in a safe position or removed from the area. Different forms of communication will be utilized to inform affected employees of the potential hazards that may exist during re-energization.

Removal of lockout/tagout devices

Only the authorized employee(s) who applied the Lockout/Tagout devices or equipment can remove them. Personnel who have applied lockout/tagout devices shall remove them at the end of their shift. Unauthorized removal of a lock may result in disciplinary action. If at any time the authorized employee(s) who applied the lockout/tagout devices and tags is not available, the following steps must be taken:

The supervisor shall ensure that the authorized employee who applied the devices and tags is in fact not at the facility.

All reasonable efforts must be made to contact the authorized employee to inform them that their Lockout/Tagout devices and equipment are being removed and ensure the authorized employee has this knowledge before they resume their work at the location or facility.

Obtain authorization for this removal from the Energy Marshal Team, onsite supervision, AND safety first.

This must be given in writing.

Locks may only be cut and removed by the Electrical Trade Partner after the above steps have been completed.

Lock Out Tag Out Audit Process

The audit process for lock out/ tag out is formalized by use of a digital form (Smartsheet). This form is to be used by designated site energy marshals/deputies and safety professionals that have been identified as competent to audit procedures for Lock Out/ Tag Out at the Los Lunas Data Center. If any corrective actions to the procedure are required, an authorized employee must correct the procedure immediately.

The inspector must communicate and discuss the procedure with all other authorized employees who did not implement the procedure during the inspection. This auditing process shall be conducted periodically while active LOTO activities are present in the workplace.

Link to form:

<https://app.smartsheet.com/b/form/ce467136cd1441dd96fc86d9b59ddf61>

QR Code to form:



Disciplinary Action- LOTO Violations

Willful actions that result in knowingly violating the set policies established in this document for the control of hazardous energies, violation of requirements set forth by NFPA70E, and any other company specific policy or procedure could result in disciplinary action up to and including termination.

Examples includes and are not limited to:

- Knowingly operating a disconnecting means with installed lock out/tag out
- Failing to lock out/tag out and engaging in work that requires lock out/tag out
- Removal of lock out/tag out and failing to follow the lock removal process

CONTROL OF HAZARDOUS ENERGIES LOCK REMOVAL FORM

*This form shall be used any time a Lockout/Tagout (LOTO) device is to be removed by someone other than the individual that placed the LOTO device. Failure to follow and document the appropriate steps to remove a LOTO device can result in disciplinary action up to and including termination.

Date: _____ Time: _____

1. Name of LOTO device owner whose lock is to be removed: _____
2. LOTO device owner's telephone number: _____
3. LOTO device owner's Foreman/Supervisor: _____
4. Document attempt to contact LOTO device owner.

Date/Time	Method of Attempted Contact	Result
1.		
2.		
3.		

5. Reason for removing LOTO device (e.g., LOTO device owner called in sick, forgot to remove after end of shift, etc.) _____
6. Evaluate the affected system(s) to ensure employee safety prior to removal of LOTO device by an Authorized Employee (Foreman or above). LOTO device(s) removed by:

Name (Print)		Job Title	
Signature		Witnessed by (Print)	
Date		Time	

7. Safety representative informed of issue prior to removal of LOTO device.

Notification Method		Name of Safety Rep.	
Date		Time	

8. Method of notifying LOTO device owner and their foreman/supervision that the device was removed prior to beginning their next shift:

Lockout/Tagout Checklist QR Code Link



Fortis lock out devices will be paired with the QR code above. When the initial lock out process takes place, a worker will scan this QR code to complete the required checklist prior to placing their lockout device.

Appendix B

Los Lunas Data Center Water Marshal Program

Site Specific Expectations:

It is understood that every site will have different designs/equipment, but the basics of mitigating unplanned water events should remain paramount. Therefore, each location will utilize site-specific P&IDs, flow maps, etc., to outline processes for each procedure regarding operations of valves, pumps, etc.

In coordination with the GC, the Mechanical, Fire Suppression, Controls Contractor Trade Partners, and the third-party testing agents, these processes will be shared to ensure the Hydronic System is operated safely and securely until turned over to the client.

This program aims to minimize or eliminate all unplanned release of hydronic energy from mechanical systems. The program also defines roles and responsibilities to support a chain of command and accountable, planned activities. In short, this program is centered on a loss prevention platform, creating a focal point to mitigate damages to Meta assets and construction activities that would generate schedule impacts and additional construction costs. It also provides the **Minimum Expectations** with regards to the role of the Water Energy Marshal. In addition, it includes Hydronic Operation Plans and specifies roles and responsibilities while providing the basic guidelines for what processes the Mechanical Trade Partner will be responsible for, what processes the Mechanical Trade Partner will take on a shared ownership role, what processes the Mechanical Trade Partner will be support for and Step-by-Step Procedures (SBS Procedures) moving forward.

Water Energy Marshal – Role Overview

At the VLL/VCN META project site, (New Builds and Retrofit Projects) the GC Partner (Fortis) will appoint a designated "competent and authorized" MEP Superintendent from their team to fill the Water Energy Marshal position and to conduct all the specific duties that are required of that position. The appointed individual will oversee *all* Water Movement activities within the specific project site. This appointment will require that this person will be involved in dealing with *all* Water Energy Management Activities.

The Water Energy Marshals shall oversee ALL forms of water movement including, but not limited to:

- Water introduction into any space during initial fill, flush, testing, disinfecting, and T.A.B.
- Water movement in any space through Level 3 Commissioning.
- Supports Water Movement Management through proven Hydronic Systems in conjunction with Controls Contractor and 3rd party Cx Agent through L5 Cx, Integrated System Testing (IST).
- Water Management Control, after IST in conjunction with Controls Contractor, until turned over to the Owner.

Water Energy Marshal – Specific Duties

Duties include but are not limited to

- Comprehensive oversight of ALL Water Energy Management duties.
- View and approve all Water Energy Management requests, ensuring a comprehensive review by all appropriate parties.
- Verify ALL Step-by-Step processes are identified, verified, understood, spelled out on appropriate forms, applicable to the task, and approved before starting any movement or introduction of water in any space.
- Communicate and coordinate with the GC, Safety, and all other sub-contractors before teams introduce water into any space.
- Verify LOTO is in place, that all participants understand, and appropriate water/valve training will be performed as required.
- Identify all areas where water will be introduced and will be flowing. Establish controlled access zones for these areas with proper signage and barricades as needed.
- Review up-to-date site-specific drawings, valve maps, and/or P&IDs that are to be used to track water flow through the system.
- Verify all processes and procedures outlined are in place and meet established criteria before introducing water or any other activities involving water movement in any space.
- Support other Trade Partner's tasks by serving as a hands-off supervisor reviewing processes to help appropriately support operation/control of the Hydronic system.
- The EM will be the primary POC reporting all deficiencies or water events immediately to ICM, the GC, Global Safety Team, or any other identified party.
- Performs regular assessments on Water Energy Management and its implementation to utilize lessons learned and best practices.

Mechanical Trader Partner Process

As the installing contractor of the Hydronic System, the Mechanical Trade Partner will be directly responsible for the following processes, which are listed in order of occurrence in the construction process, for the hydronic system:

- Initial fill of the system and testing of the system
- Pump startup and water circulation throughout the system
- Disinfection / Chlorination
- Introduction of water to the evaporative cooling humidification systems
- Testing, Adjustment, and Balancing (abbreviated as TAB moving forward) of the hydronic system

At the conclusion of Hydronic TAB, the entire water system will have been tested to meet at least 150% of the maximum pressure output and proven to operate correctly, as evidenced by:

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- All pumps operating as designed (Verified by the pump manufacturer),
- Piping has been flushed and disinfected (Verified by the Chemical Contractor),
- ECH's performing as designed (Verified by Mechanical Contractor and ECH Vendor),
- System has been tested by a 3rd party Cx team. These steps are reviewed/approved by the Mechanical EOR, with a strict set of operating parameters to safely run the Hydronic Water System.

After successful review by the EOR, the Mechanical Trade Partner's role will shift from primary ownership to support. This shift will support work by the control's contractor and 3rd party commissioning agent through Integrated System Testing (IST).

This will include Mechanical Trade Partners support for; LOTO of the hydronic pumps at the conclusion of each working day, an end-of-day report detailing "as left" status of the system, a thorough walk-down, verification, and sign-off of non-automated valves deemed critical to the operation of the system, removal of the LOTO at the beginning of each working day, proceeding with the walk-down, verification, sign-off of the critical system valves, and general system operation assistance.

The Mechanical Trade Partner will be available to assist the Controls Contractor or third-party commissioning agents anytime a hydronic system is under operation.

Roles and Responsibilities:

Water Marshall Deputy – Mechanical/Fire Suppression/Controls Trade Partner

- Appointed by Mechanical Trade Partner and approved by the general contractor. Responsible for final review and approval of any activities or procedures performed by the mechanical trade partner. They will work with the general contractor if any exceptions are made to activities or procedures submitted. Water Marshall will be responsible for ensuring that each completed SBS procedure is filed in the appropriate project database and sent out to the general contractor upon completion for their records. Will be the main point of contact in the event of a leak and will be the primary responsibility to back-out the procedure if deemed necessary.

Step-by-step (SBS) Leader – Mechanical / Fire Suppression Trade Partner – Water Deputy

- Appointed by Mechanical Trade Partner and approved by the general contractor (should be multiple individuals). Responsible for overseeing each activity and procedure that Mechanical Trade Partner will perform that affects the hydronic system. SBS Leader will be responsible for signing off each procedure step as it occurs. SBS Leader participation will be required throughout the procedure/activity. SBS Leader will be primarily responsible for ensuring critical valves are walked down, verified to be in the correct position, and signed off. SBS Leader will be responsible for removing mechanical LOTO of hydronic pumps and turning over to controls each day (following successful walk-down of critical valves). SBS Leader will be responsible for leaving the system in a safe "as-left state" after each working day, providing an "as-left" system status report to the rest of

the team, and ensuring proper mechanical LOTO is applied so the system cannot be operated or manipulated overnight or on weekend hours.

GC Sponsor – General Contractor – Site Water Marshal

- Qualified Person appointed by General Contractor responsible for overall review, approval, and supervision of hydronic activities/procedures performed by Mechanical / Fire Suppression Trade Partner. This person will be required to review/approve each plan submitted by the Mechanical / Fire Suppression subcontractor for:
 - Initial fill and testing of Hydronic System
 - Water pump startup and circulation through tested Hydronic System
 - Disinfection / Chlorination of system (Mechanical)
 - Introduction of water through the ECH system (Mechanical)
 - (TAB) Test and Balance (Mechanical)

The GC will be responsible for reviewing and approving each activity to be performed before the beginning procedure. The GC will check-in, receive status updates from the Step-by-Step (SBS) leader, and otherwise oversee the operation as it progresses through SBS routine. The GC will be responsible for reviewing and signing off on any deviation from the approved SBS procedure but can, however, halt the overall procedure if a variation is deemed to be significant. Upon completion of each overall procedure, GC sponsor will be responsible to sign-off on completion of procedure and provide any comments as needed.

Mechanical Field Supervisor – Mechanical / Fire Suppression/ Controls Contractor

- Qualified personnel from the associated trade union that is responsible for overseeing all the field personnel involved in these procedures. Will work with SBS leader to either manipulate or direct field personnel to manipulate valves throughout the procedures as detailed in the SBS procedures.

Mechanical/ Fire Suppression Trade Partner Plan Details / Requirements

The Mechanical Trade Partner will submit a detailed plan to the general contractor for review and sign-off for each activity no later than (7) days prior to activity taking place. It will be the responsibility of the General Contractor to review / approve / or ask for additional information (72) hours after initial submission by the Mechanical Trade Partner. Mechanical Trade Partners' plan will include the following;

- Plan submitted (7) days before planned activities
- Detailed SBS Plan of procedures / activities to be performed, each step will have an associated

place for the SBS leader to initial as each step takes place throughout the procedure. (General

Contractor can initial, not mandatory)

- Specifies duration and scope of work,
- Required tools, equipment, PPE, and materials utilized,
- Involves Safety to participate in the review / coordination / documentation and approval of plan,
- List of Mechanical Trade Partner personnel directly involved in planned activities,
- Precursor activities must occur before the actual plan can be started. The SBS leader will initial as pre-procedure activities are completed. (General Contractor can initial, not mandatory)
- A Piping & Installation Diagram (P&ID) which is marked up to indicate (at a minimum):
 - Identify system boundaries / zones of the procedure / operations.
 - Valve positions / matrix for sign-off by SBS leader and GC.
 - LOTO points.
 - Notes – identifying points of concern or additional clarification.
 - Mechanical / Fire Suppression / Controls Trade Partner areas will have interval monitoring (personnel walking up and down to identify any leaks, hazards, or concerns; called out as "zones" on the P&IDs).
 - Highlight the areas where Mechanical Trade Partner will have continuous monitoring (personnel remaining in immediate connection or spatial relationship with specific piping, connections, or a location (zone) identified in the Water Energy Plan) throughout the procedure.
 - Specifies GPM (Gallons per Minute) flows for hydronic system locations.
- List of identified risks/hazards and associated steps to mitigate identified risks, along with identifying companies responsible for ensuring risk mitigation occurs (NOTE: If the general contractor has identified a hazard and is responsible for mitigating an identified risk or hazard, the general contractor can instead give written direction that the risk or hazard is understood, and that they accept responsibility).
- Requires suitable barriers and mitigation equipment be in place, stationed at critical determined "Zones" for quick response to a water event.
- Back-out procedures to encapsulate risks that could arise during procedure execution.

Definitions

- **Compliance Monitoring:** Ensure compliance with an overall plan, plan requirements, ethical standards, and most importantly, compliance with the expected results of the project.
- **Continuous Monitoring:** being in immediate connection or spatial relationship with piping, connections, or a location identified in the monitoring plan, also denoted as zones.
- **Incident:** something that happens during testing that is out of the expected norm, causing

other measures to be undertaken to prevent damage.

- **Interval Monitoring:** being in an immediate connection or a spatial area for a defined period(s).
- **LOTO:** Lock Out Tag Out Procedures
- **Monitoring:** An ongoing process of tracking, evaluating, and visually inspecting activities from start to finish, helping to ensure if an event happens, there are immediate remedial action/s.
- **Non-Monitoring:** It has been confirmed that there is no need to have anyone in the area during testing.
- **Process Monitoring:** Examining the use/implementation of resources from beginning to end.
- **Risk:** Uncertainty about the effects/implications of activity focusing on negative, undesirable consequences.
- **Risk Mitigation:** The identification, evaluation, and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability or impact of adverse events.
- **Testing:** Measures to check deliverables' quality, performance, or reliability before putting them into widespread use or practice.
- **Valve Matrix:** Document that denotes valve locations, positions (Open/Closed), manipulated positions, Dates, and Valve Tag Numbers, and has sections for sign-off by field personnel, QAQC, SBS leader, and GC. (Optional for Third Party inspectors and Owner.)
- **Water Movement:** The flow of water through any piping, line, or source, which is an industry-accepted standard for the movement of water.
- **Water Introduction:** The initial flow of water through any piping, line, or source is an industry-accepted standard for water movement.
- **Water Energy Management Plan:** Proposed plan outlining the process used for water movement or introduction in any part of the building.
- **Water Energy Marshal:** Individual who will act as the primary Point of Contact (POC) and System Owner for the Mechanical Trades Partner throughout the build, for the Mechanical Systems, from the time piping/water systems are installed through shared ownership until turnover to the client.
- **Water Flow Map:** Detailed drawing showing water flow or potential flow through piping or a system.
- **Zones:** Areas denoted on P&ID showing system routed and controlled, as well as where monitoring activities will occur.

Appendix C

Los Lunas Data Center OFCI Vendor GO-NO GO Checklist



Los Lunas Data Center OFCI Vendor Go-No Go Checklist

The purpose of this vendor checklist is to promote accountability and facilitate the application of proper procedures and controls. Please fill out this sheet in its entirety and send it to the contacts listed in the footer. This sheet is a site requirement and must be submitted prior to starting work. ***Please submit this within a minimum of 5 days prior to work starting.**

- Fortis Energy Marshal Contacted
 Trade Partner Leadership Contacted
 Fortis POC

Work Details

Date of planned work _____ to _____ Company _____

Technician(s) Name & number _____

Location of work (BLDG) _____ Room(s) _____ Equipment designation _____

Type of Work:

- Inspection
 BIM Issue Resolution
 Pre-Energization Checkout
 Energization
 Other

Short Description of work

Control of Hazardous Energy

LOTO/Energy Isolation Permit Checklist

1. Has Technician reviewed Fortis Site LOTO Program? YES NO
2. Is LOTO required for this work? YES – Please get with Trade Partner POC and Fortis EM NO (If No, skip to line #8)
3. Has the One-Line been reviewed YES NO (If No, Do Not Proceed)
4. Has technician’s NFPA 70E 4-hour training been verified? YES NO (If No, Do Not Proceed)
5. Has technician’s annual LOTO training been verified? YES NO (If No, Do Not Proceed)
6. Equipment to be worked on Arc Flash Label information:
 - a. Arc Energy _____
 - b. Flash Protection Boundary _____
7. What is the PPE category level required for the live-dead-live? _____
 - a. I have and will use appropriate ARC Flash PPE as described during this activity (All PPE needs to be up to date with certification verification dates) (Initials) _____
8. Per site policy, all initial Live-Dead-Live activities require a calibrated Category 4 contact voltage meter rated for the appropriate voltage. Meter must be calibrated within the last 6 months. Do you have the appropriate meter? YES NO (If No, Do Not Proceed)
9. Will energized work be performed outside of testing and diagnostics YES NO (If Yes, please get with an Energy Marshal to discuss the justification for the work. *Note- this jobsite does not perform energized work outside of testing and diagnostics.

Required Fortis/Trade Partner/META Support:

Were all parties involved (as listed above) present at the Pre-Task Plan meeting?

- Yes
 No (If No, Do Not Proceed)



Technician Signature (s): _____

Fortis Building Super Approval: _____ Contact Number _____

Energy Marshal Approval: _____ Contact Number _____

*Entry to controlled access zones in all site spaces (i.e. electrical rooms, etc.) require Site Specific Arc Flash Awareness training. Please coordinate with the site Fortis Energy Marshal to ensure site compliance.

Site Resources

Name	Company/ Position	Phone	Email
Craig Compton	Fortis/ Tech Team Lead	(505)999-0287	
Tim Opell	Fortis/ Energy Marshal (Elec)	(505)328-7591	Tim.opell@fortisconstruction.com
Chris Wright	Fortis/ Energy Marshal (Mech)	(505)366-4599	Chris.wright@fortisconstruction.com
Austin Clark	Fortis Retrofit/ Energy Deputy (Elec)	(505)401-2015	Austin.clark@fortisconstruction.com
Mike Offutt	Fortis Retrofit/ Energy Deputy (Mech)	(505)259-1761	Mike.offut@fortisconstruction.com
Jesse Hernandez	Fortis Retrofit/ Energy Deputy (Elec)	(505)288-0323	Jesse.hernandez@fortisconstruction.com
Francisco Chavez	VCN 1 Building Superintendent	(505)728-0323	Francisco.chavez@fortisconstruction.com
Jared Winters	VCN 2 Building Superintendent	(505)595-6248	Jared.winters@fortisconstruction.com
Tom Newell	Admin VCN Building Superintendent	(505)553-2289	Tom.newell@fortisconstruction.com
Jeff Porter	Site Superintendent	(505)225-4537	Jeff.porter@fortisconstruction.com
Paul Daniels	Project Superintendent	(775)430-6298	Paul.daniels@fortisconstruction.com
Herb Gomez	OFCI Sr. Project Engineer	(505)401-2057	Herb.gomez@fortisconstruction.com
Robert Romero	OFCI Procurement Manager	(505)220-6183	Robert.romero@fortisconstruction.com
Alejandro Sanchez	Cupertino/ Energy Deputy (Elec)	(408)406-6726	Alejandro_sanchez@cei.com
Chase Bilson	Cupertino/ Energy Deputy (Elec)	(669)226-1590	Chase_bilson@cei.com
Gino Baca	Cupertino/ LOTO Manager	(408)623-6906	Jerry_baca@cei.com
Andrew Russell	McDade/ Energy Deputy (Elec)	(505)553-0862	andrewr@mwieic.com
Rigo Montoya	B&D/ Energy Deputy (Elec)	(505)991-6618	Rigobertom@banddindustries.com
Konner Lohman	Southland/Energy Deputy (Mech)	(775)399-3079	klohman@Southlandind.com
John Pennebaker	Southland/Energy Deputy (Mech)	(971)288-9374	jpennebaker@southlandind.com
Levi Ali	Fortis/ Commissioning	(505)859-1409	Levi.ali@fortisconstruction.com
Cody Bornt	Fortis/ Commissioning	(505)382-5979	Cody.bornt@fortisconstruction.com
Jacob Sanchez	Fortis/ Commissioning	(505)382-7215	Jacob.sanchez@fortisconstruction.com
Skyler Chavez	Fortis/ Commissioning	(505)808-0355	Skyler.chavez@fortisconstruction.com
Mike Sposato	Fortis/ Commissioning	(925)519-0525	msposato@criticalarccx.com
Ronney Sluga	Fortis Superintendent/CMOPs	(505)728-0358	Ronney.sluga@fortisconstruction.com
Todd Cleveland	Fortis Superintendent/CMOPs	(505)250-9025	Todd.cleveland@fortisconstruction.com
Chris Copeland	Fortis QA/QC Manager	(505)328-9028	Chris.copeland@fortisconstruction.com



Appendix D

Event Matrix- BKM Playbook

