



LV Works Management

BAU for Workplace Safety

LV Works Management



A BIG THANKS
EEA



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INDUSTRY LEADING: WEL Networks Trade Competency and Development Manager Mark Keller accepted the award on behalf of WEL alongside (from left) Trade Coach Marcus Fletcher, Team Leader Line Mechanic Steven Lawson and 2IC Line Mechanic Juta Seniuaniilau who have been heavily involved in the Programme. They are pictured with EEA President Josie Boyd.

WEL wins EEA's Workplace Safety Award

WEL Networks has won the Electricity Engineers' Association (EEA) Workplace Safety Award for 2024 for its industry-leading 'LV Works Management Programme'.

The Waikato-based Electricity Distribution Business (EDB) was one of several award category entrants. The accolade recognises excellence in health and safety and initiatives to promote safety excellence within the wider electricity supply industry.

"The Programme has been developed to improve the safety of work on the low voltage (LV) network," WEL's Trade Competency and Development Manager Mark Keller says.



"WEL is thrilled to win this award. Our interest lies in improving health and safety of workers across the industry and ensuring that they get home safely to their family, every day. We are actively sharing the procedures we have developed with the industry."

"Any procedures that make us all safer and keep the public safe have got to be worth it, haven't they?"
Steven Lawson



Collaboration has been key behind the success of the Programme with front-line workers involved all the way through, highlighting a "field-up, rather than office-out" strategy that supports "good work".

"We've purchased safety equipment, developed pictorial guidelines, placed equipment into the field for trials and asked for feedback. We devised a strategic plan and adopted an iterative process for implementation using an 'agile' methodology. We sought assistance from training partners to approach the instructional design elements of the procedures and for advice on how we could best train our people.

"We spent time in the field to understand and observe current practice; a list of tasks that necessitate specific procedures were provided by field staff and we stress-tested the process during a one-day workshop. This involved field staff, planners, system control and health and safety staff.

"To enable diverse learning styles, podcasts featuring front-line workers talking their colleagues through the process have been produced, which has also contributed to a significant increase in staff engagement," Mark says.



Mark accepted the award on behalf of WEL Networks alongside Trade Coach Marcus Fletcher, 2IC Line Mechanic Juta Seniuaniilau and Team Leader Line Mechanic Steven Lawson, who have been heavily involved in the Programme.

WEL Networks would like to thank the awards panel and the EEA for the opportunity to enter into this award.

LV Works Management



LV Works Management Process shared with;

- ✓ Downer
- ✓ Ventia
- ✓ Orion
- ✓ Marlborough Lines Limited
- ✓ Westpower
- ✓ Network Tasman
- ✓ Tasman Delta
- ✓ Northpower
- ✓ PowerCo
- ✓ Mainpower
- ✓ Top Energy
- ✓ Waipa
- ✓ Connetics
- ✓ The Lines Company
- ✓ Unison
- ✓ PowerNet
- ✓ Alpine Energy



LOW VOLTAGE WORKS MANAGEMENT

Process Group: Network Control

OR-111

Issue: A

Expert: Network Operations Control Lead: Simon Parker

Owner: Network Operations Manager: Steve Hull

DOCUMENT ISSUE STATUS

Issue	Prepared by	Approved by	Date	Detail
A	M Keller	WEL Executive	16/08/2023	First version

LV Works Management



Copies of task specific procedures shared with;

- ✓ Downer
- ✓ Ventia
- ✓ Westpower
- ✓ Network Tasman
- ✓ Tasman Delta
- ✓ Northpower
- ✓ Mainpower
- ✓ Top Energy
- ✓ Waipa
- ✓ Connetics
- ✓ Powernet
- ✓ Alpine Energy
- ✓ The Lines Company
- ✓ Omexom

LV Works Management Procedure

WEL-LV-GN-007 – Guide to Low Voltage Underground Bonding – Din Fuse

This procedure provides an overview of the bonding requirements when working with underground cables supplied from a Din-Type fuse at an LV Frame.

BEFORE YOU START

Check and Inspect:

- ☐ Notify SYSCON to confirm LV Switching operating order
- ☐ Weather Conditions
- ☐ Condition of Conductor, Cables and related hardware
- ☐ Insulated Tools
- ☐ Correct materials available to complete the task
- ☐ The Work pack to ensure information is complete (including circuit single line diagram)
- ☐ PPE + LV Gloves & Dielectric Boots



Complete a Safe Job Start (SJS) form and note the closest emergency isolation point. Note the applicable LV works management procedure to be used. Notify SYSCON when ready to commence the work.




WHAT YOU'LL NEED



Competent Worker x 2
With Full PPE + LV Gloves & Dielectric Boots



Neutral Flag



Fuke Multi Tester



Independent Earth Tester



Salisbury Visor



HVLIC Bonding Kit



LV Din Bonds



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EVERY DAY

STEP 1 - Circuit Identification



Ensure the correct circuit is identified at the LV Frame.

Check transformer capacity and arc-flash label risk.

Ensure correct PPE is worn accordingly.

Complete switching as per SYSCON operating order.

STEP 2 – Check for isolation



Check and test the circuit has been isolated using Prove Test Prove method.

Identify Neutral conductor and fit indicator.

Remove LV fuse links from carriers.

STEP 3 – Confirm correct circuit isolated



Check downstream pillar is isolated using the Prove Test Prove method.

NB: Correct fuse isolating circuit has now been confirmed.

Check live side of fuses to confirm which way Din blades will be installed.



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EVERY DAY

LV Works Management

Copies of Podcasts shared with;

- ✓ Northpower
- ✓ Unison
- ✓ Top Energy
- ✓ Network Tasman
- ✓ Downer
- ✓ Ventia
- ✓ The Lines Company
- ✓ PowerNet
- ✓ EEA Safety Forum, played one episode in my presentation



LV Works Management



Communication:

- Flyers
- Presentations
- Meetings
- General assistance in the office and in the field with WEL staff and contractors

LV Works Management Project

JUNE 2024

PROGRESS UPDATE

We are here



- Developing the new LVWM process and procedures was the crawl phase.
- We are now in the walking phase as we've started implementation and doing work only involving WEL (not contractors) because we're still learning as we go. Our current focus is **all planned work** in SYSCON controlled areas. We're also rolling out self-issue of the LV Live Work Permit for trained staff using a device app.
- Once this is well embedded we'll start running by **including fault and contractor work**.

FOUR KEY OPERATIONAL AREAS

Planning work on the LV Network

The requirements for work method selection, risk assessment and management of LV Network access requests.

LV Work Permits

The requirements and process for the issue and control of permits covering: Live Work, Isolated Task Specific Live Work, Isolated and Bonded Access, and LV Testing.

LV Live Work

The requirements for managing work on the live LV Network.

LV Switching Operations

The requirements for LV Network switching and communication between SYSCON and Switching Operators in the field.

Continues overleaf



To find out more:

MARK KELLER

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LV Works Management Project

OCTOBER 2024

PROGRESS UPDATE

- For us at WEL, working under the new LV Works Management processes and procedures is **now underway for all planned LV work inside and outside SYSCON controlled areas**.
- This means that a **network request** needs to be submitted and switching is required for **de-energised work - both overhead and underground**.
- All bonded LV work needs to be completed under a **LV access permit**.
- All unbonded LV work needs to be completed with **task specific procedures** and a **LV live work permit**.
- What about the 4 November date that has been mentioned in some places? **4 November is the deadline for our contractors to be ready by**. Contractors that have the right equipment and training in place are all good to go now, and can commence operating under the new LV Works Management processes and procedures.

NEXT STEPS

- As we do more of this work we'll provide more insights to the technical planners, including information requirements for access requests and bonding.
- We'll continue with training people to issue LV permits.
- We'll also continue with training for applying LV bonds.

WHERE TO FIND OUT MORE

- ➔ Listen to the LVWM podcast series - head to Viva Engage (formerly Yammer) or contact Greg Palmer in the WEL Communications team.
- ➔ Read the OR-111 LV Works Management document available in Content Manager.



To find out more:

MARK KELLER

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LV Works Management

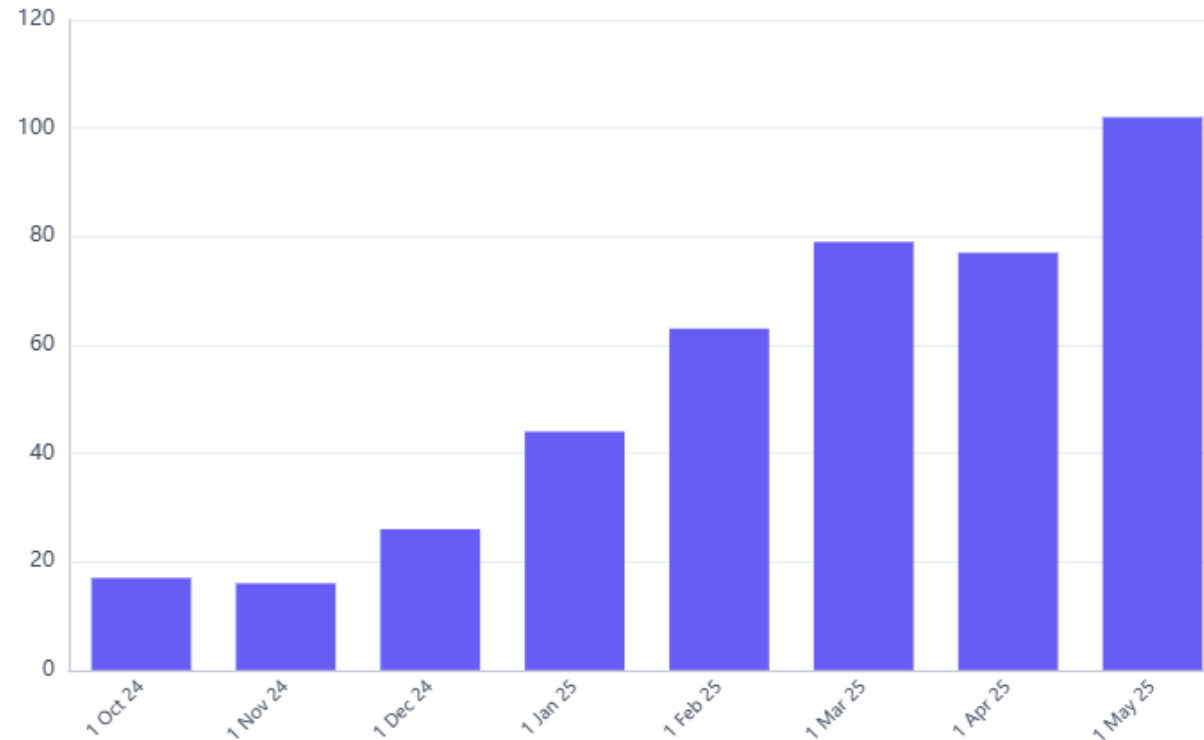


LV Live Work Permit:

- WEL numbers

Inspections by Date conducted

1 Oct 2024 - 31 May 2025



Low Voltage Works Management - LV Live Work Permit
25 Jun 2025 / LV-UPW000633 / Toby Oneill

Low Voltage Management ID

LV-UPW000633

Action

Conducted on

25 Jun 2025 10:16 AM GMT+12

Action

Issuer

Toby Oneill

Action

Location

1187 Victoria St
Waikato
Hamilton 3200
New Zealand
(-37.77512506373613, 175.2719766312896)

Map data ©2025

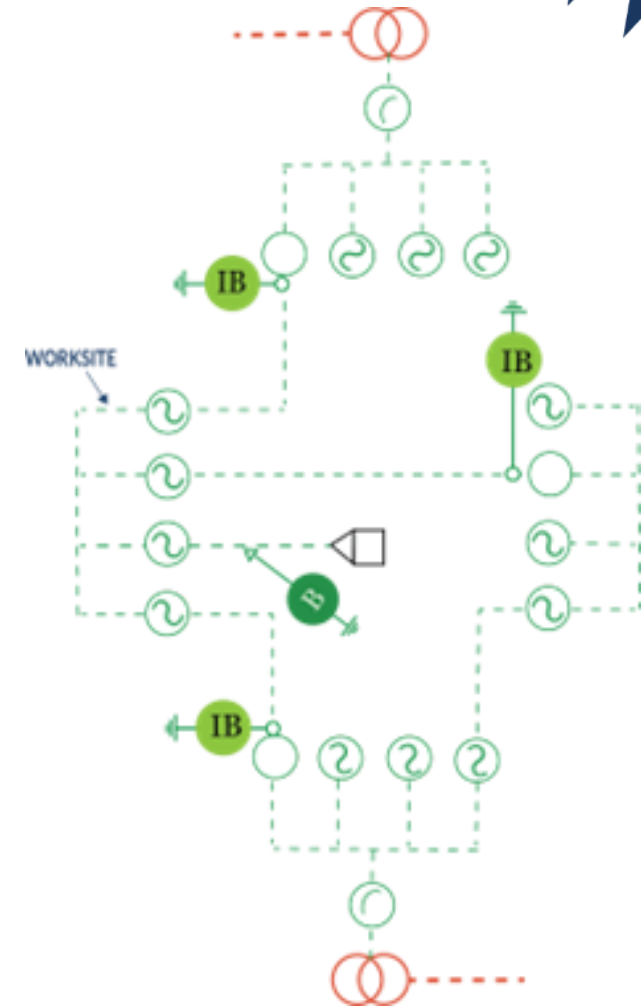
Action

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Implementation

- We currently have half our LV network mapped and in our NMS system
- Reluctance to change
- Inaccuracies in GIS have caused jobs to be rescheduled



LV Works Management

- Planned LV work
- Fault LV Work
- Where to Bond?
- Permitting

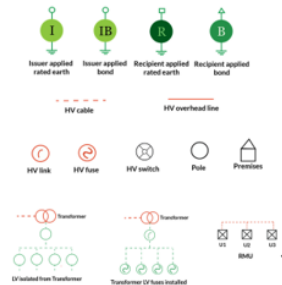
OP-109 LV Works Permitting Managed by SYSCON WEL Control Centre



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OP-109 LV Works Permitting Managed by SYSCON WEL Control Centre



1. Purpose and Application

SYSCON's role is to provide safe access and permitting. This procedure aims to guide the implementation of LV permitting through guidelines for Low Voltage (LV) works managed by SYSCON. It provides detailed instructions on permitting, safety measures, and operational protocols for various scenarios involving LV and High Voltage (HV) networks. The primary goal is to ensure safe access and effective management of LV works, emphasizing the importance of deenergizing work sites and proper bonding. The document covers different types of permits, including HV Access Permits, LV Access Permits, and LV Live Work Permits, both inside and outside SYSCON controlled areas. It also addresses the coordination between HV and LV works, the use of network management systems (NMS), and the role of field staff in managing live work procedures.

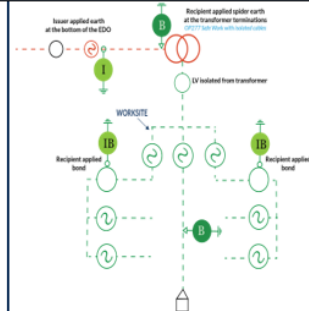
2. General Guidelines

Note: Prior to bonding, the worksite shall be checked to ensure it is deenergized.

- 2.1 If there is switching, it requires a Network Request and Written Switching. Opening and closing jumpers is considered switching.
- 2.2 Operation and bonding of service fuses/cables are not included in the LV Works Management Process as far as SYSCON is concerned.
Note: Isolation and bonding of service conductors/circuits shall be managed by the recipient.
- 2.3 Streetlights are considered a service.
- 2.4 Issuer bonding of LV shall be on remote network ends.
- 2.5 One bond per circuit (remote end).

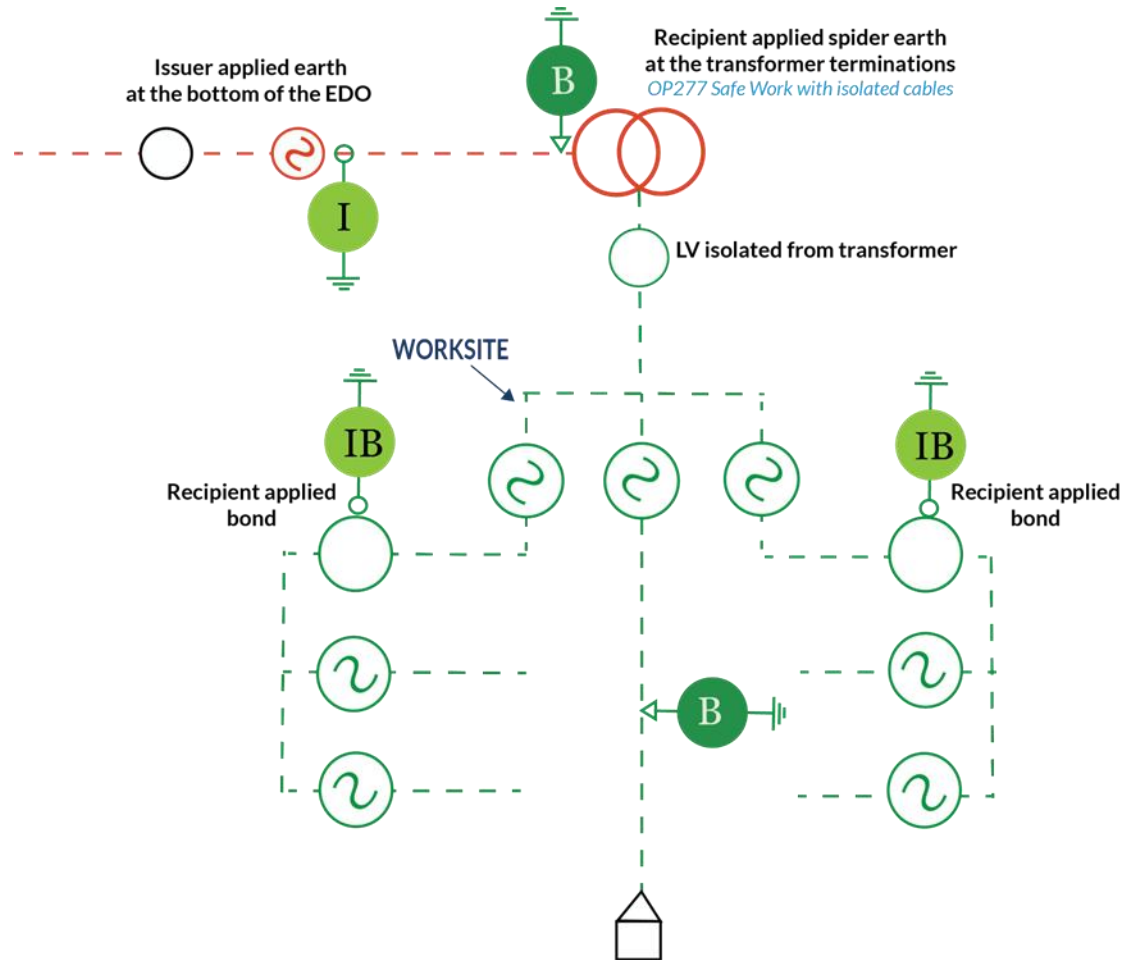
3. HV Access Permit with LV Work Inside SYSCON Controlled LV Network Area

- 3.1 Any work with HV isolation requires an HV Access Permit. LV bonds shall be placed at remote ends only.
- 3.2 Example: Transformer LV frame replacement with HV isolation but LV work done under an HV permit.
- 3.3 Permit is created within NMS.
- 3.4 Safety measures shall include both HV and LV isolations at remote ends of the worksite and be documented in section 6 of the access permit.
- 3.5 Include both HV earths and LV bonds in section 7 of the access permit.
- 3.6 If the HV permit is returned to the issuer and the HV network is livened before all LV work is completed, all staff must sign off the HV access permit prior to returning it and remain clear of the equipment until livening is completed. LV bonds can remain in place. When the HV circuit is safely livened, an LV access permit shall be issued, and any recipient safety measures recorded in section 8, including any recipient bonds.

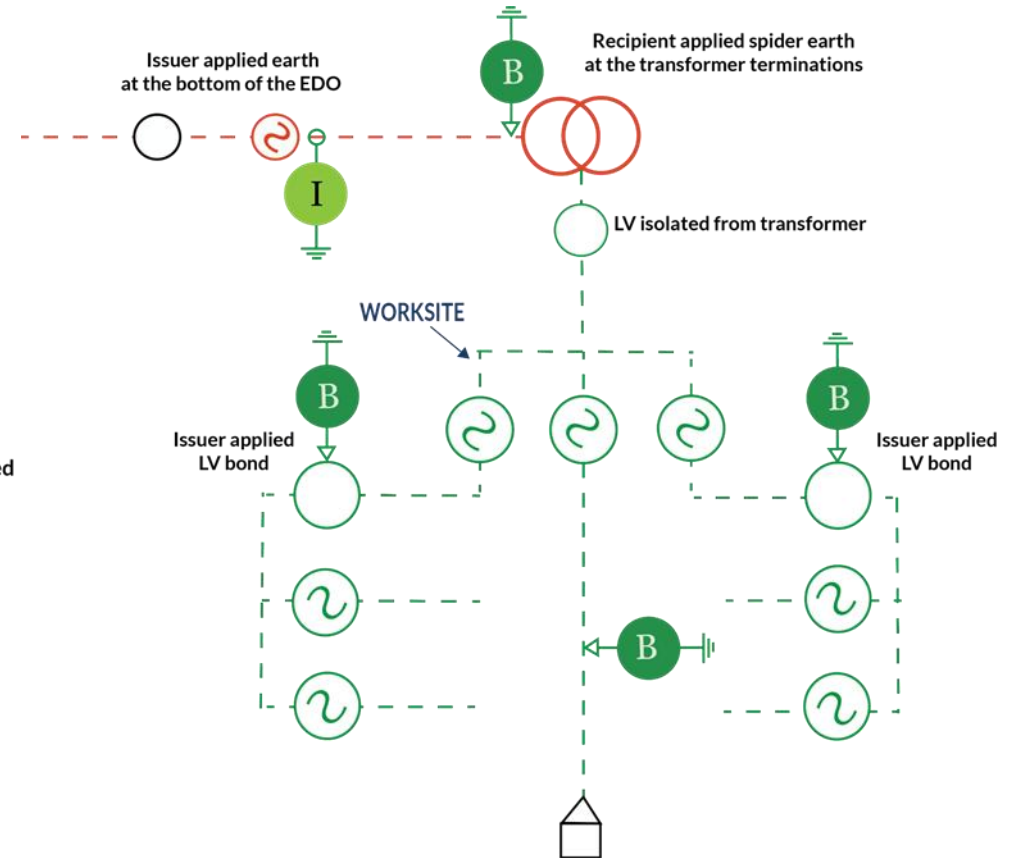


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HV Permit with LV Isolations and Bonds Inside SCADA

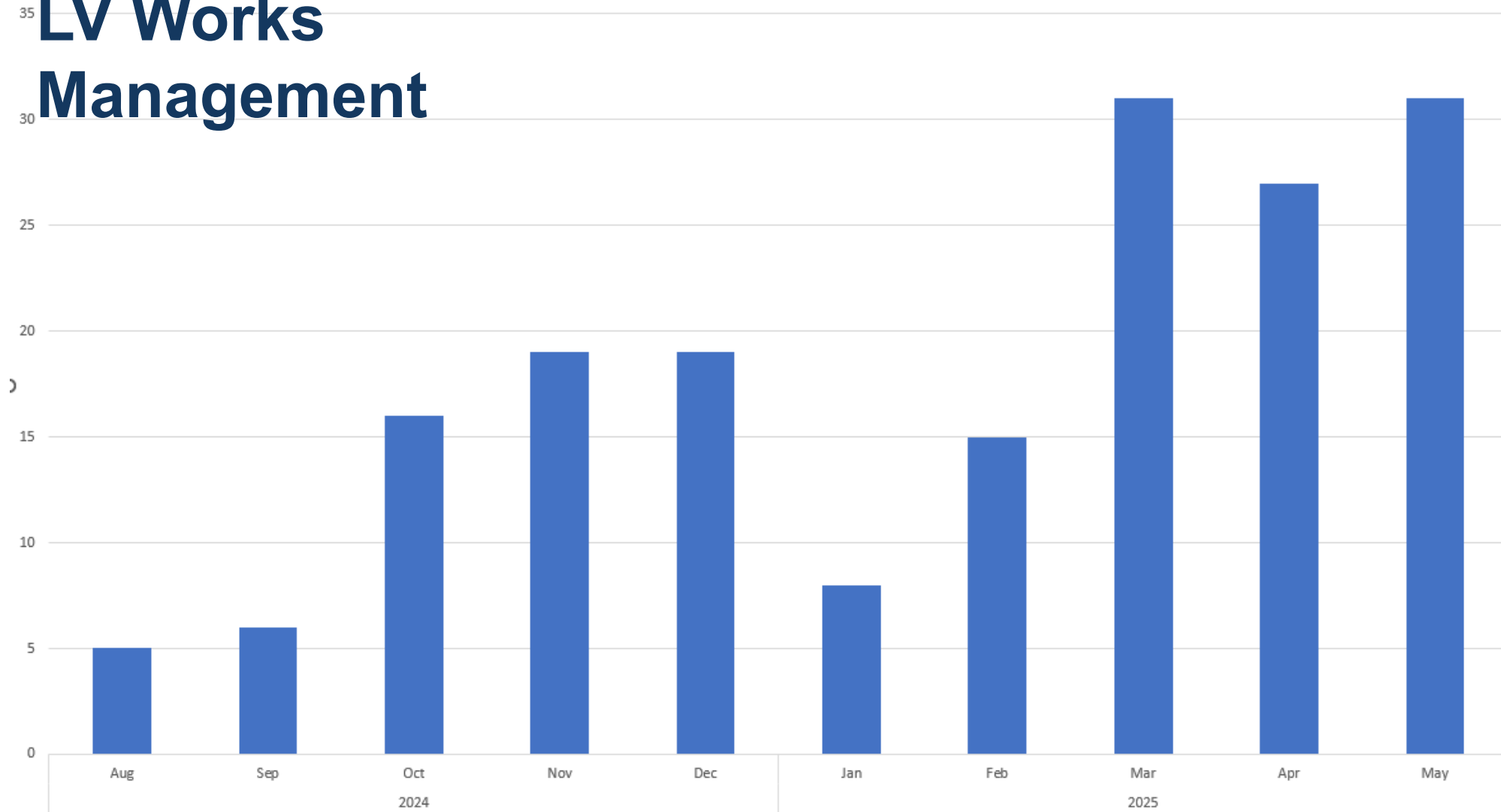


HV Permit with LV Isolations and Bonds Outside SCADA



Planned

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What's Next?

- External review of field work
- Incorporate Our systems in external training
- Increasing SCADA visibility



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Questions?

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