

Electrical Engineer interview questions

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What to expect

Interviews for Electrical Engineer roles generally test two things: whether your technical grounding in design, calculations and standards is solid, and whether you can work through the messier realities of site delivery and team coordination.

- **Process / walkthrough:** You're asked to describe how you'd approach a design or calculation task step by step, testing your method as much as your answer.
- **Behavioural:** Past-experience questions about compliance issues, disagreements or project pressure, usually answered with a specific example.
- **Scenario / judgement:** A hypothetical site problem where the panel wants to see how you'd weigh safety, timeline and cost under pressure.
- **Technical:** Direct questions about tools like ETAP, MATLAB or PLC programming, and how you've actually applied them, not just whether you've heard of them.
- **Compliance and standards:** Questions checking your working knowledge of AS/NZS standards and how you keep that knowledge current.

Most processes start with a phone or video screen focused on your technical background and tools, followed by a panel interview that mixes behavioural and scenario questions. For more senior or design-heavy roles, expect a technical exercise or a walkthrough of a past design you've worked on.

1. Walk me through how you'd approach load analysis and power calculations for a new infrastructure project.

Why they ask

This is a core, recurring task for the role, and the panel wants to see a methodical approach, not just the right final numbers.

How to structure your answer

Step-by-step walkthrough: state what information you'd gather first, the tools and standards you'd apply, how you'd check your own work, and what you'd flag to the team if results were borderline.

Example answer

"I'd start by confirming the load schedule and any growth allowance the client expects, then build the model in ETAP so I can run load flow and fault analysis together rather than separately. Once I have preliminary results, I cross-check the key figures by hand or in MATLAB, because I don't want a single tool's assumptions driving the whole design. If anything comes back close to a threshold, like transformer capacity or cable derating, I'd raise it with the project engineer before locking in component specifications, rather than assuming it'll be fine."

2. Tell me about a time you identified a compliance issue in a design or installation.

Why they ask

Compliance sits at the centre of this role, and the panel wants evidence you catch issues rather than just follow a checklist.

How to structure your answer

STAR: situation, task, action, result, told in that order with enough specific detail that it clearly happened.

Example answer

"During testing on an installation, I found a switchboard configuration that didn't quite meet the clearance requirements in AS/NZS 3000 once the final cable runs were in. My task was to resolve it without blowing out the schedule. I worked with the site supervisor to reposition part of the board and updated the schematics to reflect the change, then re-tested before sign-off. The result was a compliant installation with only a short delay, and the client appreciated that we caught it before energisation rather than after."

3. You're on-site the day before handover and equipment fails a safety test. What do you do?

Why they ask

This tests judgement under time pressure, and whether you'll prioritise safety over a deadline.

How to structure your answer

Judgement-under-pressure structure: state the immediate priority, the information you'd need, the decision you'd make, and how you'd communicate it upward.

Example answer

"My first move is to stop and understand exactly what failed and why, rather than guessing at a fix under pressure. I'd isolate the equipment, document the failure clearly, and get the client and project manager aware of the delay as early as possible rather than late. If it's a component fault, I'd look at whether a replacement can be sourced in time; if it's a design issue, I'd rather push the handover date than sign off on something that doesn't meet the standard. Safety and compliance take priority over the schedule every time, and I'd rather explain a short delay than a failure after commissioning."

4. What's your experience with ETAP, MATLAB or PLC programming, and how have you applied them on real work?

Why they ask

The panel wants concrete examples of tool use tied to actual tasks, not a list of software names.

How to structure your answer

Direct technical answer: name the tool, the specific task you used it for, and what the output fed into.

Example answer

"I use ETAP most for load flow and fault studies on distribution and industrial projects, feeding the results directly into equipment specification and protection settings. MATLAB comes in when I need to model control system behaviour that ETAP doesn't handle well, like checking a controller's response before it goes into a PLC program. On the PLC side, I've written and modified logic for equipment interlocks, then verified it against the schematics on-site during commissioning rather than trusting the simulation alone."

5. Describe a time you disagreed with a technician or contractor over an installation approach.

Why they ask

Electrical engineers work closely with trades on-site, and the panel wants to know you can hold a technical position without damaging the working relationship.

How to structure your answer

STAR, with particular attention to how the disagreement was resolved and what the working relationship looked like afterward.

Example answer

"A contractor wanted to run a cable route that would have made future maintenance access difficult, mainly to save time on installation. I explained the maintenance implications and showed them the relevant clearance requirements in the schematic, but I also listened to their concern about the schedule. We agreed on an alternative route that met both the standard and a reasonable install time."

It took an extra conversation, but the result held up and the contractor and I worked well together for the rest of the project.”

6. Which Australian standards do you reference most in your day-to-day work, and how do you stay current when they're updated?

Why they ask

Compliance knowledge dates quickly, so the panel wants to know your habits, not just your qualifications.

How to structure your answer

Direct answer: name the standards relevant to your work, then describe your actual method for tracking updates.

Example answer

“AS/NZS 3000 comes up constantly for general wiring rules, and AS/NZS 61439 for switchboard assemblies on most of my projects. I keep track of updates through Engineers Australia and Standards Australia notifications, and I make a point of checking the specific clauses relevant to a project at the start rather than assuming last year's version still applies. I've also found it useful to raise standard changes in team meetings so the whole project team is working from the same version, not just me.”