

Broadcast Transmitter Operator interview questions

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What to expect

Interviews for broadcast transmitter operator roles mix practical fault-finding discussion with safety and reliability questions, because the job is largely about what you do when something fails at an awkward hour on a site with nobody else around.

- **Technical fault-finding:** How you reason through a transmitter, antenna or audio chain fault, what you measure and in what order.
- **Scenario and outage response:** What you would do with an alarm, a service off air or a partial coverage problem, including when you would escalate.
- **Safety and RF hazard:** Working near live antennas, high field strength areas, towers, high voltage and lone working at remote sites.
- **Compliance and records:** Understanding licence conditions, technical standards and the paperwork that sits behind them.
- **Behavioural and reliability:** Past examples of shift work, on-call response and staying calm when a service is down.

Expect a screening conversation with a supervisor or engineering manager, then a technical interview with the transmission team, often followed by a site visit where you walk through a transmitter hall and talk about what you can see. Some employers add a short practical task such as reading an alarm log or explaining a schematic. Questions on the on-call roster and your availability usually come near the end.

1. This role runs a rotating shift and on-call roster across remote sites. Can you tell me about a time you had to respond to a callout outside normal hours?

Why they ask

They need to know you will actually turn up and that your personal circumstances suit a roster with night and weekend work.

How to structure your answer

Use STAR, but keep the emphasis on the decision and the recovery rather than the drama: situation, what the alarm or call told you, what you did first, and how the service ended up.

Example answer

"I was on call over a long weekend when the monitoring platform sent a low power alarm from a hilltop FM site about an hour's drive away. I checked the remote readings first and could see output power falling and the standby transmitter still healthy, so I called the supervisor, confirmed I was taking the callout, and drove out with the standard spares kit and a test receiver. On site the main transmitter had dropped to about half power with a rising temperature reading, so I took it off air and brought the standby unit up, which restored full service. I then stayed to check the cooling fans, found one had seized, replaced it from spares and tested the main unit before putting it back as the primary. I logged the fault and the fix that night so the day team had a full record."

2. Walk me through how you would handle a low power alarm from a remote transmitter site in the early hours of the morning.

Why they ask

This is the core of the job: a calm, ordered response under time pressure with limited information.

How to structure your answer

Give a clear sequence: verify the alarm, gather remote data, decide whether to travel or fix remotely, restore service, then document and follow up.

Example answer

"First I confirm the alarm is real rather than a telemetry glitch, by checking a second source such as the receiver monitoring or the SNMP trend, and I look at what else has changed at that site. Then I look at the pattern: falling power with steady VSWR points towards the transmitter or its power supply, while a jump in VSWR suggests the antenna or feed line. If the fault is something I can clear remotely, such as an audio processor that has locked up or a transmitter that will accept a reset, I do that and watch the readings for a few minutes before standing down. If not, I notify the supervisor, bring the standby transmitter to air if it is available, and travel to site with the spares that match the likely fault. Once service is restored I log the alarm time, the cause, the action and any parts used, and I flag anything that needs a permanent repair so it does not wait for the next failure."

3. How would you use a spectrum analyser or test receiver to confirm a transmitter is meeting its modulation and mask requirements?

Why they ask

They want evidence you understand the measurements behind the licence conditions, not just how to swap a module.

How to structure your answer

Answer as a technical explanation: what you connect, what you measure, what you compare it against, and what you do if it fails.

Example answer

"I would take the measurement at a proper monitoring point rather than at the transmitter output where the levels are unsafe, using an attenuator and the correct coupling. On the spectrum analyser I would check the carrier frequency against the assigned channel, look at the occupied bandwidth and the shape of the sidebands, and compare the emissions outside the channel against the mask in the licence conditions. For FM I would also check deviation and pilot or subcarrier levels, and for digital services I would look at the modulation error and the shoulder levels. If anything sits outside the mask I would work back through the chain, starting with the audio processor or multiplexer settings and then the exciter, since a misadjusted processor is a common cause of an over-deviating or over-wide signal. Any measurement I take goes into the site record with the date and the instrument used."

4. What controls do you apply before working near an antenna or in a high field strength area?

Why they ask

RF exposure and tower work are the main ways this job hurts people, and they want to hear controls, not bravado.

How to structure your answer

Work through the safety system in order: identify the hazard, isolate or reduce power, apply permits and personal protection, verify before you start.

Example answer

"I start by checking the site's RF hazard assessment and the field strength map for the areas I need to enter, and I confirm whether the transmitter can be reduced in power or shut down for the task. If it can, I arrange the power reduction with the control room and get it confirmed before I go anywhere near the antenna, then verify the level with a personal monitor rather than assuming. Working at heights means the harness, anchor points and rescue plan are sorted before climbing, and on towers I follow the site's tower rescue procedure. I also make sure someone knows where I am and when I am expected to check in, especially at an unmanned site. If any of that cannot be put in place, I stop and escalate rather than work around it."

5. A fault you have already fixed comes back and the service is still degraded, with people asking for updates. What do you do?

Why they ask

They are testing judgement under pressure and whether you will keep good communication when a fix does not hold.

How to structure your answer

Show a judgement under pressure approach: stabilise the service first, reassess rather than repeat the same fix, communicate honestly, escalate at the right point.

Example answer

"I would stop repeating the same repair and treat the first fix as a symptom rather than the cause. Priority is getting a usable service back, so I would bring the standby transmitter to air again or reduce the service in a controlled way rather than let it run degraded and fail on its own. Then I would reassess from the start, looking at what the readings were doing before the first failure and what has changed since, and I would bring in a second set of eyes or the engineering team if I was running out of hypotheses. On communication, I would give the control room and the program team a straight update: what is off air, what I have done, what I am doing next and when I will call again, even if the answer is that I do not know yet. I would also keep a running log so that the next person has the full picture."

6. How do you keep licence conditions, maintenance records and calibration up to date across several sites?

Why they ask

Compliance is a real part of the role and ACMA expects the records to stand up.

How to structure your answer

Describe the process you use: a schedule, a consistent record format, checks against the licence conditions, and how you handle overdue items.

Example answer

"I work from a maintenance schedule per site, with the licence conditions pulled out into a checklist so nothing is missed: power limits, frequency, emissions and any site specific requirements. Each visit gets logged in the same format, covering what was inspected, measured values, parts replaced and anything deferred, with the instrument and calibration date recorded so the measurement can be trusted later. I keep calibration dates in a forward planner with reminders ahead of expiry, and if something cannot be done in the scheduled window I flag it to the supervisor and record why, rather than leaving a gap in the history. Before an audit I can pull the full record for each site and show the maintenance and measurements line up with the licence."