



---

## Checklist for maximum Analyzer Availability

This checklist is intended for the users of on-stream XRF analyzers, however it applies to many instruments with the same technology or similar applications. It contains a list of items to check or consider in order to achieve maximum availability of the instrument.

The first five items are mostly organizational matters. Use them to lay out a strategy to prevent unplanned downtime, and to plan ahead what to do if the instrument fails.

The other five items are things to check on the analyzer. Keeping the instrument in good general condition and looking for weak spots can prevent many failures.

**Go over this list every six months and enjoy the results!**

### Check service and maintenance

- Has the analyzer been serviced according to the manufacturer's instructions?** If not, list the gaps and make a plan to bring the service schedule back on track.
- What details on the instrument has required service or repair the last year?** Are there any related items that should be replaced as well to prevent unplanned downtime?
- Check Service Level Agreement.** Does it cover all necessary aspects? Can you get a service engineer on site within a reasonable amount of time?
- Review the spare part strategy.** What should be available on site? What spare parts are held on stock elsewhere? What is the expected delivery time from the manufacturer? Parts with low Mean Time Between Failure and parts that are critical for function should be available on site.
- Review user competence matrix.** Is trained staff available on all shifts? Is it time to train more staff? Ask manufacturer to come to your location and train your staff once a year.

### Check XRF analyzer

- Is it safe?** Check for radiation leakage. Verify function of breakers in the safety loop.
- Is it clean?** Remove dust and dirt on the outside. Replace any Mylar windows.
- Is the temperature cool and stable?** Check fluid level in x-ray tube cooling system. Check air conditioning of the analyzer room. Replace air and water filters.
- Are parts moving freely?** Check action of moving parts. Verify play and clearance against other parts. Look for wear.
- Is the sampling system OK?** Check primary and secondary samplers for wear and clogging. Check sample pumps for wear. Check hoses and pipes for wear and that they are secured tightly. Check function of secondary sampling system.
- Is there a fresh backup of software and calibrations?** Make a new backup anyway. Make sure it is stored on redundant disks and available to service staff. Check disk space on hard drive. Remove temporary or old files if necessary.