

A close-up portrait of Jørgen Skogmo, a man with dark hair, a mustache, and a goatee, looking directly at the camera with a serious expression. He is wearing a dark blue jacket with a green inner lining. The background is a blurred, textured grey.

Interview with Jørgen Skogmo, Level II inspector at Aker Solutions

People, processes, and complementary methods

Non-destructive testing at Aker Solutions is not about choosing one method over another, but about understanding how they work together.

Before joining Aker, Jørgen, 43, spent nearly a decade in London as a professional musician, performing 15th and 16th-century repertoire with English National Opera and English Touring Opera. His main instrument was the lute — one of the most demanding early-music instruments, played professionally by only a handful of people worldwide.

The discipline, precision, and attention to detail required in this artistic environment would later become the foundation for his career in quality control and eventually NDT. After returning to Norway, he worked in CNC manufacturing, where he naturally took on responsibility for quality due to

his structured, detail-oriented personality. Through this role, he discovered NDT — a field where his mindset aligned perfectly with the requirements of careful inspection, consistency, and technical craft.

Today, Jørgen is a Level 2 inspector at Aker Solutions, working in visual testing, magnetic particle testing, penetrant testing, and X-ray testing. His career path illustrates how competencies developed far outside the industry can enhance reliability, depth, and precision inside it.

Ensuring every weld gets the right inspection

At Aker, each weld is prequalified in the system before an inspector sees the job. Every weld receives a unique spool number, and each method requirement is defined upstream based on its classification and criticality. Once welding is finished, the welder or foreman marks the item RI, Ready for Inspection, after which all welds go through visual testing as the mandatory first step. Depending on the category, some welds require magnetic powder or penetrant, while highly critical golden welds require all available methods. PMI is performed when necessary to verify alloy composition before applying surface- or volumetric-based techniques.

This structure ensures consistency, traceability, and a standardized workflow, forming the foundation for Jørgen's reflections on how different NDT methods complement one another rather than compete.

How work arrives and is defined at Aker

How does an inspection job arrive in the system at Aker, and what steps do you follow from the moment a weld is ready until you begin surface and volumetric testing?

"There's a mix. We can look it up ourselves in our system, but who decides which method to use? That is not really something I have to think about. In other firms, that would be a question, because you would have to find out what sort of defects you are searching for. And if it is a volumetric defect, you do not use a surface-based method. Then you would





choose either X-ray or ultrasound. But here we do whatever is in the system.

All welds are registered in the system under a unique spool number. Once welding is completed, the foreman or welder marks the joint as Ready for Inspection (RI). Every weld then undergoes visual testing (VT) as the mandatory first step.

Depending on the category, additional methods such as magnetic particle or penetrant testing may be required. Highly critical "golden welds" that cannot be pressure-tested require the full range of available NDT methods to verify their integrity. In addition, I perform a lot of PMI (Positive Material Identification) to verify the material before inspection."

How do you carry out PMI, and what comes after it in the inspection process?

"You test it with the PMI pistol, and it is also an X-ray. You shoot the weld and the base material, and it tells you the level of chrome, nickel, and so on. Low, heavy X-rays produce scattered radiation that determines the material's composition. It is the same type of instrument you might see in a jewelry shop. We have several of them in the office.

Then I search for surface defects. You have penetrant testing, which is a penetrant dye. It is a liquid

that gets drawn into cracks or pores, and then it bleeds out later in the process to indicate the defect."

Methods and their pros and cons

From your experience, how do the different NDT methods compare, and what should inspectors understand about their strengths and limitations?

"All NDT methods have their own strengths, and none of them replace each other. X-ray, ultrasonic, penetrant testing, magnetic particle testing, and even eddy current, although we do not use it much here, all serve different purposes. Magnetic particle testing is extremely sensitive and very fast to use, but it only works on magnetic materials, so if the material is not magnetic, you will not find anything. For stainless steel here, for example, magnetic particle testing still works.

Penetrant testing also has limitations. The material cannot be porous. You need a clean and fine surface, and temperature plays a big role. If you are outside in low temperatures, you need a special penetrant and longer dwell times. Eddy current, by comparison, can go through paint, which shows how different the methods are. So choosing a method often comes down to conditions and practicality, and yes, speed can be an important factor."



"You shoot the weld, develop the film, and the defect is right in front of you"

Jørgen Skogmo, Level II inspector at Aker Solutions

Phased array and X-ray

Comparing phased array and X-ray, what stands out around safety, suitability, and complementarity?

"There is a safety concern regarding X-ray emissions from both radioactive sources, such as Iridium or Selenium, and from X-ray systems, such as Comet EVO tubes. They can be dangerous if not handled properly. That is one reason some people talk about increasing phased array use. But in practice, the two methods, Phased Array and X-ray, complement one another. For very thick materials, a phased array can give a more precise indication of a defect.

On the thin materials we work with here, X-ray provides a very accurate and very clear representation of the defect, and it does so quickly. There are many considerations, and in my view, it is hard to see how one method would replace the other now, each has its place."

Where X-ray shines at Aker

Where does X-ray deliver the most value in your daily work?

"X-ray is especially effective on piping, particularly thin-walled pipes. A very common wall thickness we inspect is around 2.77 mm. At Aker, we use portable systems such as the Comet EVO 225 1200 and the EVO 300DS, which deliver very clean, precise images on these thinner materials. Personally, I enjoy the hands-on nature of X-ray work. You take the shot, develop the film, and the defect is right there in front of you. It is a very direct and tangible process."

Complementary methods and craftsmanship

Jørgen's path from performing early music on the lute to inspecting welds at Aker reflects a consistent theme: precision, discipline, and doing things properly. In his daily work, that mindset translates into understanding how each NDT method contributes to the overall picture.

For him, the strength of Aker's approach is clear, no single technique replaces another. Phased array provides detailed images of thicker materials, X-ray



Magnetic particle testing on a weldseam



Penetrant testing on a weldseam

delivers exceptional clarity for thin-walled piping, and surface methods like magnetic particle and penetrant testing provide fast, sensitive detection. PMI verifies the basics before any of it begins.

Together, these methods form a complementary system that ensures every weld receives the right inspection. And just as in music, where different instruments create a complete performance, Jørgen values seeing the result of careful, hands-on work: In a field built on trust and safety, this blend of craftsmanship and methodical structure is exactly what makes inspectors like Jørgen, and the complementary technologies they use essential.

"Customers recognize that a Comet product may cost a bit more, but they value its reliability and appreciate that they can get it twice as fast when it matters"

Jørgen Skogmo, Level II inspector at Aker Solutions



COMET Technologies Denmark A/S
Helgeshøj Alle 38, 2630 Taastrup, Denmark
T +45 72 40 77 00
VAT DK 18 21 52 33
Web: xray.comet.tech
Mail: mail.xray.dk@comet.tech

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x-ray

"The good thing about X-rays is that you can use them on almost any weld. You don't have to worry much about geometry"

Espen Røstum Austheim, level II inspector at Aker Solutions

Technology and equipment

How do you choose the right equipment for each inspection?

"It depends on the NDT method and what we are testing. In radiography, for example, we choose between isotopes (gamma ray) and electronic X-ray systems depending on the material, the weld type, and accessibility. The goal is always the same - to achieve reliable inspections with the best possible image quality.

Sometimes customer requirements also play a role. Certain projects demand specific documentation formats. I've heard of cases where all analog films had to be digitized for insurance purposes, which meant the department needed to invest in specialized equipment.

Espen and his team primarily work with Comet X-ray EVO systems, which deliver clear and detailed images. The adjustable power range allows them to fine-tune settings for different materials and welds, ensuring consistent image quality across many applications.

There are also practical considerations. The equipment can be heavy when it needs to be moved or used in confined spaces, which is why isotopes are still used in some situations. The X-ray units can also be noisy due to the cooling fans - something that could be improved to make the working environment quieter. The pipe sample examined during our visit is part of the PWP topside project and will be sent to Stord for final assembly. In Verdal, the focus is on prefabrication and preparation. At the same time, the team is also supporting work on the Fenris and Hugin V projects."

The future of X-ray inspection

Do you think X-rays will remain important in the future?

"Yes, I do. Some methods might replace certain applications, but not everything. Other techniques often require more space around the weld. X-ray works better in tight areas, which is why I don't think it will ever disappear completely. It may be used less in some cases, but it will always play a role.

At Aker Solutions' Verdal facility, Comet X-ray systems are part of that long-term perspective, supporting consistent image quality and reliability as inspection requirements continue to tighten."

Closing thoughts

Do you see yourself staying in NDT long term?

"I hope so. I would be happy to build my career in NDT. I want to continue developing, gain more experience, and maybe reach Level III one day. It would be interesting to work more in-depth with inspection procedures and really understand how everything fits together.

I turn 27 this December, so I still have time to grow and learn. What I like about this work is that it's a mix of learning, doing, and improving every day. I get to use both my mind and my hands - and what I do contributes directly to safety for both people and large industrial projects."