

Interview with Per Gunnar Johansen, Level III inspector, Aker Solutions

When steel never sleeps

At Aker Verdal, gigantic steel jackets rise through long seasons, cold winds, night shifts, and daily routines that never truly pause. Thousands of welds appear and disappear into documentation systems, inspectors move across halls, and equipment hums without rest. In a place where the scale is measured in thousands of tons and margins in millimeters, reliability is not a feature; it is a necessity. This is the world in which Per Gunnar Johansen works, and this is how the flow endures.



Can you describe your responsibility as a Level III?

"My Level III position involves handling standards, interpretations, and technical decisions. My days are a mix of documentation, supporting inspectors, and ensuring compliance with rules and quality standards."

Inspecting at the Scale of Steel

Aker works at an extreme scale. How does this affect NDT work?

"Jackets are the 'feet' of offshore platforms. At Verdal, we can build four at once. From prefabrication in A1 or A2 production halls to a finished jacket, it takes about a year. Sizes range from around 2,900 tons to 22,000 tons. One of the largest we ever built was about 24,000 tons. Heights can exceed 140 meters. Production varies, but generally we can make four jackets at once."

Thousands of welds are created on these structures. How is the inspection workload determined?

"The scale is enormous. Everything involves welding, and each weld must be inspected according to its category. The amount of NDT depends on the weld's location. The inspection levels comply with the standards, and customers can request additional control. Jackets are massive, so the inspection workload becomes very high."

How does the system decide which method to use?

"The inspector does not choose the inspection methods. They are autogenerated in MIPS (Method Integrated Project System) based on rules configured within the system – such as weld thickness,

Systems ensuring the the flow

At Aker Solutions, fabrication depends on several complementary NDT methods working together as one system: PAUT – the primary volumetric inspection method for critical welds

- **UT** – standard ultrasonic testing
- **MT** – surface indications
- **VT** – the first inspection step
- **Gamma (Ir-192 / Se-75)** – for tight or portable setups
- **RT / X-ray** – high-quality imaging and a pacing step in production

These methods work together, never in competition – each chosen according to standards, weld categories, and MIPS.

material type, inspection category, and requirements in the design drawings. For example, an A-category weld automatically triggers 100% NDT, and the system creates the correct work order for VT, MT, UT, or RT.

When a new weld number is entered into MIPS, all required methods appear immediately because the settings are already defined. PAUT (phased array UT) is included in these autogenerated rules for advanced UT tasks."

"The 300 kV system has been extremely good. It wasn't cheap, but it has earned its value and runs almost continuously – basically 24/7"

Per Gunnar Johansen, Level III inspector, Aker Solutions

Can you describe the role of MIPS in your daily work?

"MIPS stands for Method Integrated Project System, and it's an extensive system used across Aker Solutions in Norway – not only at the Verdal site. It's the central system for material acceptance, tracking, documentation, and inspection workflows. Every department uses it to register equipment, components, and work progress, so nothing moves without being logged in MIPS.

For the NDT department, there is a dedicated part of MIPS that handles all welds and inspection tasks. Every workplace at Aker Verdal – A1, A2, the jacket area, the piping hall, and the store is defined in the system. Each weld is assigned a unique weld number. When production finishes a weld, they mark it 'RI – Ready for Inspection' in MIPS. If I'm responsible for an area like A1, I start every morning by checking what was completed the previous day. The VT inspectors conduct the visual inspection first, and afterward, the system shows which NDT methods are needed: MT, UT, and sometimes RT.

From MIPS, I get a complete list of welds, and I can pull up the drawings directly. We also use a feature called EasyView, which was introduced two or three

years ago. EasyView gives a 3D visual representation of the weld, including thickness, length, material, inspection category, and other key parameters. It is directly linked to MIPS and makes it much easier for inspectors to understand precisely what they are looking at, especially on steel structures. So, MIPS provides weld data, drawings, inspection status, and the entire workflow. It is basically the backbone of how we handle NDT work at Aker."

How is reporting handled?

"Most of the large projects we handle use negative reporting. That means we only create a formal report when we find a flaw or when a weld needs repair. If everything is OK, we don't write a report, the system already shows that the weld has passed all inspections.

But now we are getting new work where the customer wants something different. For example, on subsea projects, the customer requires a physical report for every weld, whether it is OK or not. That is what we call positive reporting.

In positive reporting, we complete a full report for each weld: the method used, what we inspected, and the result."

An aerial view of Aker Solutions' Verdal yard in Norway – impressive in scale, where enormous steel structures rise from the yard before being deployed to the sea.



What happens if a weld fails?

"If a weld must be repaired, that goes into the negative reporting stream. We create a full report showing exactly where the defect is. For example, if a weld is 2,800 mm long and the repair area is between 1,000 mm and 1,020 mm, we mark the precise location on the sketch and include it in the report. The report is then emailed to the foreman and the customer.

If something happens once, it's usually fine – a 20 mm repair today and nothing for a week is no problem. But if the same type of flaw keeps appearing day after day, they act."

Reliability Where It Matters Most

You've been responsible for X-ray equipment for many years. How do you select and maintain systems?

"Yes, I've been responsible for all X-ray equipment for many years, so I'm involved when we need new systems. I've had a long cooperation with Holger Hartmann, the Comet X-ray distributor, so I know them well.

If we need a new 300 kV X-ray system from Comet, I'll plan for it. I've tried to hand off responsibility for the equipment, but I still handle most of it.

I also send a lot of equipment for calibration through Holger Hartmann, UV meters, light meters, PMI equipment, general NDT gear, and the RT, gamma sources, and X-ray systems."

How does troubleshooting and support work when something goes wrong?

"If something is wrong with the X-ray system, they call me from the bunker. I go down and check the error message on the control unit. Then I call my contact at Holger Hartmann and describe the message.

Sometimes Holger Hartmann can guide me through fixing it myself, for example, by going into a menu or entering a code. But if the message is more serious, we send the system to the distributor for service. I've only done a diagnostic report on the Comet EVO once. You use a USB stick on the backside of the control unit to pull the report - easy."

How has the Comet equipment performed?

"We don't have calibration routines for the X-ray systems themselves, only repair routines, and that's because the equipment is excellent. Our Comet EVO 300D and EVOD/1200 units have been running for many years. One of the 225 kV units we bought second-hand from an old mine. It was already used, but we got a guarantee on it, so we bought it anyway, and we've used it ever since. Then we have the 300 kV system with a 1 mm focal spot, which has been extremely good. We bought it five, seven, maybe eight years ago. It runs almost continuously – basically 24/7 now."

"Out in the field, each area has a responsible person, and everything is documented in sequence, so nothing falls through the cracks"

Per Gunnar Johansen, Level III inspector, Aker Solutions

"For me, reliability is everything. If you need a system that runs almost non-stop, then paying more up front is worth it. A cheaper unit that fails more often costs much more in downtime. The EVO 300 kV unit we bought years ago is a good example, it was expensive, but it has run for thousands of hours with almost no issues.

So I agree: it's better to invest in high-quality equipment that you can trust. When something is used this much, quality is what makes the difference."

When steel never sleeps

The jackets rise through long days and longer nights. The inspectors move with them, from weld to weld, from hall to hall, from code to code. MIPS sets the rhythm, standards guide the work, and each method plays its part: PAUT, UT, MT, VT, Gamma, RT.

When a short delay can ripple across thousands of welds, reliability becomes more than a requirement; it becomes the quiet force that keeps the yard moving. That is why the equipment must endure. That is why the people must endure. And that is why the steel at Aker Verdal never truly sleeps, because those who watch over it never stop.

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