

Cohesive's Joe Klecha: Transforming the nuclear industry

Cohesive is an international digital integrator delivering transformational outcomes across the asset lifecycle – from design and construction to operations & maintenance and decommissioning.

by Juan Villarreal

Joe Klecha is a veteran of the nuclear industry having worked for several of the leading utilities in the United States, managing new construction as well as fleet operations. I recently met with Joe, the Chief Nuclear Officer & Global Power/Utility Lead at [Cohesive Group](#), a subsidiary of Bentley Systems, at its beautiful company offices in Kennesaw, Georgia.

Joe has embarked on a journey to transform how the nuclear industry approaches the development of new power plants, as well as the management of the current installed fleet. As we were discussing the current state of the industry and the strategy that Cohesive is applying to transform it, I was impressed with Joe's passion and determination to make a difference in this highly regulated segment of the energy space. The following is a summary of our conversation as I posed specific questions to Joe.



Juan Villarreal: Joe, thanks for spending time with me today, showing me what Cohesive is up to. First, let's start with this, what do you see as the top challenges for the nuclear industry today?

Joe Klecha: The nuclear industry is facing several challenges across the life cycle of the generation asset. Let me break these challenges into three areas, Operations & Maintenance (O&M), Decommissioning and New Build.

- In the O&M area the asset owners are focused on reducing cost, delivering on the Nuclear Promise. Some asset owners have made considerable progress and others are just getting started. Cohesive is addressing this gap by helping the asset owner apply new technology in support of transitioning from time-based to condition-based maintenance. This includes the supply of industry experts in the field to facilitate the submittal of Technical Specification upgrades and Licensing Upgrades with the Nuclear Regulatory

Commission (NRC). In summary, using technology to enable the legacy asset owners to apply a risk-based approach towards operations and maintenance.

- Several asset owners are starting to grapple with the challenges of decommissioning operation nuclear plants. One of the challenges is to reverse-construct the plant, and there's not a good strategy for doing that. Asset owners are learning as they go. Using our internal technologies and robotics for decommissioning, we can help with that process.
- Finally in New Build, taking advantage of technology to integrate the activities of the asset life cycle to reduce risk and cost – how to drive the whole the life cycle management concept from a digital perspective, from design, prototype, construction or manufacturing, commissioning, startup, operations and decommissioning. Having the end in mind and each phase in mind provides the opportunity to reduce cost, risk and improve safety by doing the integration up-front. We make sure that there are good hand-offs and ties between phases. We can't completely de-risk, but the industry can do a better job.

Juan: How is Cohesive addressing these challenges?

Joe: In the operating area we are applying asset management tools to reduce maintenance costs with the existing installed base using enterprise asset management (EAM) software. We, at Cohesive, aim to be tool agnostic, bringing the best solution for the particular need, making sure all the interfaces and training are in place. In decommissioning, Cohesive is in early discussion with potential clients overseas, for example in the UK.

In the new build area, we bring process architecture first, then apply the best tool. Let us help you, and be your advisor, your partner, and offer you the road map for the life cycle – and then select/design the best tool. In addition, we have suite of partners that we can bring in to be part of the solution, to solve the client's particular problem. We want to be the bridge from the client's needs to the suite of solutions. Help clients make good decisions. This is part of our growth strategy.

Juan: Can you tell us more about what Cohesive does for the nuclear industry in particular?

Joe: Bentley, the parent company, has worked with nuclear utilities for many years applying software for plant design, engineering and site planning. Now, as Cohesive, we are focused on the implementation of asset management processes and systems. One of the largest projects we are executing is with Evergy in Kansas City at the Wolf Creek Nuclear Plant. We've implemented a corrective action system and we are currently working on upgrading their maintenance, work management, and supply chain systems.

Juan: So, tell me, what would you say is Cohesive's differentiator versus the competition?

Joe: Frankly, our main competitive advantage is our people. We have a team of nuclear experts, some at the executive level. They've come up through the ranks, operating valves and pumps.

They did the planning and execution of projects at nuclear plants and then grew to be managers and executives. We understand the plant's needs; we have sat in those seats. We really understand the pressures and risks that the Chief Nuclear Officer in the corner office has. This, combined with the Bentley suite of technology and tools, and Cohesive's brilliant architecture technologists, makes us more competitive. There is no company out there like us.

Juan: What do you think the nuclear industry will look like 10 years from now?

Joe: Everybody is really inspired about the future of nuclear. Coming out of the COP 26 World Summit, suddenly, there's a new found love for nuclear. I see the nuclear generation asset as a key piece of the portfolio of solutions to achieve greenhouse gas reduction goals proposed at COP 26. Nuclear will be the cornerstone of any proposed solution. People are starting to understand that nuclear can be the path to get there. We had to put nuclear on hold for the last 20-30 years. If we had continued with the innovation and the new build we see today, we could already be closer to the climate goals we are looking to achieve now. It's also encouraging to hear environmentalists who were previously against nuclear, now coming out in favor of nuclear.

The drive to electrification will increase the need for a resilient and flexible grid. Nuclear can be the one of the foundational cornerstones to make it happen. Demand will keep increasing, for example with all the new electric cars on the road. Nuclear will be a key piece for our climate and electrification goals. There is no one solution, diversification is a must.

Nuclear will take off. The question is, how long will it take to get there? Can we reduce some of the regulatory burden, and apply more of a risk-based approach to accelerate the new build? There are a lot of new safety features in the new designs. Also, I'm realistic and know that economics and geopolitical events in the future will change our current expectations.

Juan: Any thing else you want our readers to know?

Joe: We want to be the hub, and the bridge to help utilities, constructors and architect engineers to come up with new ideas and solutions. Solutions for reducing the risk, cost and improve safety for new nuclear build as well as to reduce the operating costs of the existing fleet. I want the readers to know that we are new in the market providing this suite of solutions; however, the individual components of the solution have years of experience in the nuclear industry.

Juan: Thank you for your time today, Joe. Our ANS members will be really interested to read about what Cohesive is bringing to the industry. It's exciting times. Thanks again.

Joe: My pleasure.

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