Interview with Mr. A.K. Tyagi –Founder, Chairman & Managing Director- Nuberg EPC

Q. How has plant construction changed in the last 5 years?

The past five years have seen a major transformation in plant construction, driven by rapid technological advancements, a stronger focus on sustainability, and evolving industry demands. One of the most significant shifts has been the adoption of artificial intelligence (AI) and automation, which are revolutionizing project management, optimizing timelines, and reducing human error. Additionally, modular construction and prefabrication are gaining traction, allowing companies to cut waste, improve quality control, and accelerate project completion.

Sustainability is now a core priority in plant construction. The industry is steadily moving towards electrification, with companies adopting electric heavy machinery to cut emissions. In parallel, advancements in energy storage have made these transitions more practical for large-scale industrial projects. Plant construction is also evolving with the integration of green building materials, efficient insulation systems, and advanced water and waste management technologies. Strict environmental regulations across global markets have further accelerated the shift towards cleaner and more compliant construction practices. The use of 3D simulations during the design phase allows engineers and clients to experience the plant virtually before execution — enabling precise planning, scalability assessments, and early identification of potential design issues. Additionally, smart energy management systems powered by IoT devices optimize resource consumption in real-time, reducing costs and carbon footprint. However, a significant challenge lies in the shortage of skilled professionals adept in these modern tools and technologies. Bridging this gap demands focused investments in workforce training and on-site upskilling programs tailored to emerging construction trends.

At Nuberg EPC, we are at the forefront of these industry changes. By leveraging cutting-edge technology and prioritizing sustainable practices, we are not just adapting to new trends—we are shaping the future of plant construction.

Q. How do you manage the coordination between various teams (engineering, procurement, construction) during the plant's construction?

At Nuberg EPC, we ensure seamless coordination between our engineering, procurement, and construction teams through a structured and integrated project management approach. Effective collaboration across these key functions is essential for maintaining timelines, controlling costs, and upholding quality standards. Our centralized project management system oversees the entire lifecycle—from conceptualization to execution—allowing all teams to work in alignment while proactively addressing scope changes and design variations.

Technology plays a crucial role in enhancing coordination. We utilize advanced project management tools like Primavera for scheduling and real-time monitoring, ensuring efficiency and transparency across all phases. Additionally, we leverage modular construction and skid-mounted technology, enabling prefabrication of key components before on-site assembly. This approach reduces construction time, minimizes disruptions, and enhances overall efficiency. Our in-house manufacturing facility in Gujarat further strengthens procurement coordination by reducing dependency on external suppliers and ensuring the timely availability of high-quality components.

A dedicated workforce of over 700 professionals ensures smooth execution by managing logistics, supplier coordination, and regulatory compliance. Our project teams ensure timely execution by combining in-house manufacturing, cutting-edge technology, and expert on-site supervision. Cross-functional collaboration is reinforced through frequent progress meetings, integrated digital platforms, and centralized reporting systems. Given our global footprint, we maintain seamless communication across geographies — for instance, our design team based in Noida works in close coordination with our fabrication unit in Gujarat. Whether it's a sudden design modification or an urgent material dispatch, our teams stay aligned through real-time updates and coordinated workflows. This ability to bridge physical distances ensures that our engineering, procurement, and construction functions operate in sync — delivering high-quality, timely, and cost-effective projects while upholding our leadership in the EPC sector.

Q. What safety standards and regulations are essential in the construction of industrial plants, and how do you ensure compliance?

Safety is a top priority in industrial plant construction, and strict adherence to safety standards and regulations is crucial to protect both workers and project integrity. Nuberg EPC takes pride in its impeccable safety record, with zero accidents since its inception in 1996. This commitment to safety not only ensures worker protection, but also establishes us as one of the safest contractors in the industry.

We comply with OSHA standards, covering fall protection, hazard communication, scaffolding, electrical safety, and PPE requirements. Every worker undergoes extensive safety training, ensuring they are equipped to handle risks effectively. Personal Protective Equipment (PPE), including helmets, gloves, and harnesses, is mandatory, and strict site management ensures designated work areas, clear pathways, and proper signage to minimize hazards.

Emergency preparedness is integral to our approach. We implement fire prevention strategies, evacuation plans, and emergency response training to ensure swift action in case of incidents. Regular safety inspections and audits help us proactively identify and mitigate risks, reinforcing our commitment to workplace safety. Our Health, Safety, and Environment (HSE) policy ensures compliance with international best practices through systematic risk control, rigorous training, and continuous monitoring of safety measures.

AI-driven automation and AR/VR tools are used for safety training and inspections, improving risk assessment and hazard communication. Additionally, our in-house manufacturing capabilities provide strict oversight, ensuring all equipment meets industry benchmarks. At Nuberg EPC, safety isn't just about meeting regulations—it's embedded in our culture, ensuring every project upholds the highest standards of worker protection and operational excellence.

Q. Nuberg EPC operates in diverse geographical regions. How would you ensure compliance with local and international regulations, including environmental standards, during plant construction?

With over 28 years of experience and over 60 turnkey projects delivered across 32 countries, we have developed a deep understanding of global and local regulatory landscapes, allowing us to seamlessly navigate compliance challenges. Our structured approach integrates technical expertise, adaptive strategies, and strict adherence to both global and local regulations. With over 300 engineers delivering 300,000 engineering man-hours annually, we have the capability to navigate complex regulatory landscapes. Our fabrication facilities adhere to ISO, ASME, U Stamp, and IBR standards, ensuring international quality and safety benchmarks. Additionally, our R&D center drives innovation in sustainable technologies, helping us stay ahead of evolving environmental standards.

Environmental compliance is embedded at every project stage, from design to commissioning. We conduct Environmental Impact Assessments (EIAs) and implement pollution control measures such as dust suppression systems, erosion control, and wastewater treatment. We align with global frameworks like the Clean Air Act and Clean Water Act while adhering to region-specific mandates such as LEED and Estidama in the UAE. In sensitive areas, we conduct wildlife surveys and habitat conservation initiatives, ensuring compliance with laws like the Endangered Species Act. Occupational safety is also a priority—we follow OSHA standards and develop site-specific safety plans to protect workers and mitigate legal risks.

Technology and proactive engagement further enhance compliance. We leverage Building Information Modeling (BIM) to optimize resource use, reduce waste, and improve efficiency. Early stakeholder engagement helps us align with local social welfare regulations, ensuring smooth project execution. In countries with strict environmental mandates, such as China, we integrate environmental protection facilities into our construction schedules to maintain compliance without delays. Post-construction, we conduct rigorous system trials and collaborate with regulatory authorities for final inspections.

Q. Describe an example where you maintained a positive relationship with a client despite challenges during construction. How would you apply this approach in your role at NUBERG EPC?

Maintaining strong client relationships is essential, especially when construction challenges arise. In a past project, unforeseen delays due to adverse weather and supply chain disruptions posed significant risks. Instead of merely updating the client on setbacks, I took a proactive approach by ensuring open and transparent communication. Regular progress meetings and detailed reports kept the client informed, while inviting their input on mitigation strategies fostered a sense of collaboration. By focusing on solutions rather than problems, we were able to maintain trust and reinforce our partnership, ultimately delivering the project successfully despite obstacles.

At Nuberg EPC, I would apply the same principles to manage client expectations effectively. Challenges such as regulatory hurdles, logistical issues, or design modifications should be framed as opportunities for collaboration rather than setbacks. Engaging clients in the problem-solving process not only reassures them but also strengthens their confidence in our expertise. Being solution-driven is key—I would not just highlight issues but also provide clear action plans and realistic timelines to address them.

Consistent communication, whether through scheduled reports or direct client interactions, would ensure alignment throughout the project lifecycle.

Q. What strategies would you use to manage procurement challenges and minimize delays when sourcing materials or equipment for a large industrial plant project?

Managing procurement effectively is essential to keep large industrial plant projects on schedule and within budget. At Nuberg EPC, we take a strategic, multi-faceted approach that includes vendor development, proactive planning, quality assurance, efficient logistics, and technology-driven solution. By prioritizing long-term partnerships with reliable suppliers, we ensure a consistent supply of high-quality materials while securing better pricing and priority access to critical resources. This approach also enables us to adapt quickly to supply chain disruptions, reducing the risk of delays.

Strategic sourcing and planning are key to mitigating procurement risks. We define project requirements early, conduct market intelligence, and negotiate contracts well in advance to secure high-quality materials on time. Our rigorous quality assurance protocols, including pre-shipment and post-delivery inspections, ensure compliance with international standards and prevent delays caused by defective materials. Logistics coordination further enhances efficiency—we work with experienced partners to manage customs clearance, optimize transportation, and implement contingency plans to address unforeseen disruptions.

Technology plays a crucial role in modern procurement. We utilize advanced procurement software to track orders, analyze real-time data, and manage the supply chain with full visibility, allowing us to identify potential delays early and take correct action. Additionally, our risk management framework assesses vulnerabilities in the supply chain, factoring in geopolitical risks, currency fluctuations, and regulatory changes to adjust sourcing strategies accordingly. By integrating robust planning, strong supplier relationships, and cutting-edge technology, Nuberg EPC ensures seamless procurement operations, minimizing delays and maintaining the highest quality standards in industrial plant construction.

Q. NUBERG EPC often works on large, complex projects. Can you discuss a challenging aspect of a previous industrial plant project and how you overcame it?

During the construction of a chlor-alkali plant in Egypt amid the COVID-19 pandemic, we faced significant challenges in logistics, workforce availability, and regulatory compliance. Travel restrictions and supply chain disruptions created uncertainties, requiring

quick and strategic intervention to keep the project on track.

To ensure our technical team could reach the site safely, we chartered flights for engineers, minimizing delays while prioritizing health protocols. This proactive step allowed us to maintain technical oversight and project momentum despite global restrictions.

Navigating complex regulatory requirements was another hurdle, as different countries had varying compliance standards. By conducting thorough due diligence and fostering strong relationships with local authorities, we streamlined approvals, ensuring smooth material procurement and adherence to all necessary regulations.

Through strategic planning, adaptability, and innovation, we successfully completed the project on schedule. This experience reinforced the importance of flexibility and timely intervention in EPC execution, demonstrating Nuberg EPC's ability to navigate unforeseen challenges while maintaining efficiency and compliance.

Q. How do you handle waste management and disposal during plant construction?

At Nuberg EPC, waste management is a key priority, driven by our commitment to environmental sustainability and regulatory compliance. We follow the waste management hierarchy — focusing on prevention, reuse, recycling, recovery, and disposal — right from the planning stage. Our approach is to minimize waste generation and maximize resource efficiency on-site.

For example, during the execution of our chemical plant project in Egypt, we established a dedicated material segregation zone. Concrete debris was crushed and reused for non-structural fill works, while steel scrap was collected and sent to certified recyclers. This initiative not only reduced the landfill burden but also optimized material usage and costs. The project demonstrated how real-time strategies in construction can lead to both environmental and economic benefits.

Compliance and staff training are central to our strategy. We stay updated on evolving environmental laws, conduct regular audits, and train teams in proper waste handling. Hazardous waste is strictly managed through classification, labeling, storage, and disposal via licensed facilities to ensure safety for both the workforce and the environment.

Beyond compliance, we engage with local communities to maintain transparency and address concerns. We also continuously refine our waste management practices, leveraging innovative solutions to reduce our environmental footprint. By embedding sustainability into every project phase, Nuberg EPC ensures responsible waste handling while maintaining operational excellence.

Q. How do you apply your skills in helping Nuberg EPC succeed in project execution, safety, cost management, and client satisfaction in large-scale industrial plants?

As the founder of Nuberg EPC, my focus is on ensuring that every project upholds the highest standards of execution, safety, cost control, and customer satisfaction. This is achieved through a well-defined, integrated methodology that aligns every team — from engineering to commissioning — with the project's core objectives. Our project execution strategy revolves around delivering complete EPC solutions—from basic and detailed engineering to procurement, construction, start-up, and commissioning. By utilizing advanced project management software, we closely monitor critical activities, eliminating uncertainties and enhancing efficiency.

Beyond compliance, we foster a safety-first culture where every team member prioritizes risk mitigation and adherence to global safety standards.

Cost management and client satisfaction are at the core of our operations. Our in-house engineering team optimizes designs for efficiency and cost-effectiveness, while our manufacturing plant in India enables us to produce high-quality components, reducing dependency on external suppliers and mitigating supply chain risks. By offering end-to-end EPC solutions customized to each client's needs, we provide seamless integration across all project phases, positioning Nuberg EPC as a trusted and reliable leader in delivering large-scale industrial projects efficiently.

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