Hydraulic Engineer

Student's Name

Institutional Affiliation

Course Name and Number

Professor's Name

Date

Hydraulic Engineer

The authors of the article "Hydraulic Engineer" are Professor Willi Hager and Oscar Castro. Willi Hager became a professor in 1998. He worked as a lecture at ETH Zurich, and he lectured Scientific methods in dam hydraulics. He studied diploma civil engineering at ETH in 1976. Oscar Castro is a professor at the University of Cordoba in Spain (Hager & Castro-Orgaz, 2017). He works at the University of Cordoba as a professor of hydraulic engineering. The authors who wrote this article were inspired by Alexander Koch, who was played a significant role in developing various hydraulic systems. Koch was a hydraulic engineer for state roads in Germany. Koch engaged in various activities of hydraulic engineering. For example, he became a member of the imperial canal and participated in the correction of Iller and Danube rivers. Koch has a lot of experience in engineering and it motivated him to establish a hydraulic laboratory. This paper will discuss the responsibilities of a hydraulic engineer, the composition of hydraulic systems, and its challenges.

A hydraulic engineer is in charge of designing a hydraulic system and making sure all equipment works. A hydraulic engineer plays a vital role in designing dams, reservoirs, water treatments, and canals (Mcgill, 2020). Hydraulic engineering is a course within the discipline of civil engineering. The most important thing about studying this course is acquiring skills such as; organizational, leadership, decision-making skills, and math skills (Hager & Castro-Orgaz, 2017).

A hydraulic engineer has the following duties and responsibilities. Analyzing details contained in survey reports and any other information that contain geological and topographical information such as maps, drawings, and blueprint (Kirkman et al., 2017). A hydraulic engineer must supervise and lead staff members to ensure all activities are carried out in the site area. Also, they are involved in designing structures and giving a piece of advice to subordinate staff concerning any changes that need to be communicated to the senior level (Kirkman et al., 2017). The engineers ensure all project specifications are met, and safety measures are observed keenly

The modern hydraulic system is created with various applications, from small assembly process to combined steel and paper mill applications (Crookston & Tullis, 2016). The system helps engineers to achieve various tasks such as lifting heavy loads and drilling holes. The system uses fluid to transmit energy and consists of four components: reservoir, pump, valves, and actuators. The hydraulic reservoir holds the volume of the fluid, transfers heat from the system, and allows solid particles to settle at the bottom. The pump transfer mechanical energy into the hydraulic system. Hydraulic valves start and stop the flow of fluid (Lyu et al., 2018). Actuators convert hydraulic energy into mechanical energy.

Hydraulic engineers face a lot of challenges in the field. The National Fluid Power Association (NFPA) in America brought together a team of engineers who worked in various industries to air their grievances. The engineers claimed to face various challenges, such as; increasing energy efficiency, reducing environmental impact, building a smart system, and improving storage capacity (Crookston & Tullis, 2016). Hydraulic accumulators can solve challenges in hydraulic system because they catch and store energy (Dichtomatik, 2020). An

accumulator is efficient for storing and releasing energy, which improve the hydraulic system.

In conclusion, hydraulic engineering can be studied as a course if a person is interested in becoming a hydraulic engineer. The person who studies hydraulic engineering is referred to as a hydraulic engineer. A hydraulic engineer has various responsibilities and duties. The engineers are in charge of ensuring all projects are completed. However, they are responsible for designing and taking care of hydraulic systems. Hydraulics engineers face many challenges in their work, for instance, when building a smart system that will control the water levels. Finally, hydraulic engineers use their skills to better a country's infrastructures.

References

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