Immersive Game Development for Safety Training in the Process Industries

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Abstract: Fatalities, injuries, and incidents within the oil and gas industry impose irreversible losses and substantial costs. Despite improvements in novel methods, equipment, and regulations, the accident rate remains a cause for concern. In this context, training emerges as a critical component of safety studies, introducing essential knowledge to employees and updating current employees' understanding. Additionally, it is the basis for accident prevention strategies, aiming to mitigate the impact of accidents and disasters on human lives and property. Traditionally, safety training has been conveyed through diverse methods, encompassing safety manuals, videos, in-person or online lectures, and practical exercises. However, replicating extreme scenarios in the real world often proves to be unfeasible due to constraints in time, cost, and safety considerations. Alternatively, the recent integration of virtual reality (VR) for safety training emerges as a versatile tool for designing safety training systems and studying human behavior in emergencies, which is fundamental for quick response and effective decision-making. Therefore, this research delves into exploring and integrating VR for training and analyzing accident prevention in oil refinery environments. The study identifies accidental scenarios involving releases of hazardous chemicals, utilizing the Unreal Game® engine to create a simulated emergency environment with visual and audio aspects. This immersive experience reflects the challenges in refineries while safeguarding players from the risks inherent in accident situations, increasing the engagement and effectiveness of security training programs, and making the content more compelling and conducive to learning.

Keywords: Virtual Reality, Safety, Process Industry, Training

1. INTRODUCTION

Accidents within the energy sector have the potential for severe consequences, stretching far beyond the facilities' confines. They directly impact those involved and can profoundly affect entire communities, leading to enduring socioeconomic and environmental ramifications [1] Thus, implementing preventive measures and adherence to safety protocols is imperative in curbing the frequency of accidents and mitigating the resultant physical and financial tolls [2].

In the oil and gas industry, accident prevention is paramount due to the inherently hazardous nature of its operations, encompassing processes such as drilling, refining, transportation, and the storage of volatile substances [3]. For instance, in Brazil, the fatalities stemming from the 2001 P-36 (Petrobras) incident are directly attributable to individuals engaged in emergency response endeavors triggered by the ignition of gas clouds while endeavoring to regain control following hydrocarbon leaks [4]. Similarly, the 2005 explosion at the BP Texas City Refinery in the United States, occurring during the operational restart of a hydrocarbon isomerization unit, resulted in the tragic loss of 15 factory workers' lives and injuries to 180 others [5]. The US Chemical Safety Board (CSB) meticulously reconstructed the accident, offering a realistic depiction (accessible at Updated BP Texas City Animation on the 15th Anniversary of the Explosion (Youtube.com)). (CSB website)

In such instances, swift response training is provided to emergency response teams to enable rapid on-site intervention. These emergency brigades' preparation, formation, and collaborative capabilities with other response entities are pivotal in effectively managing crises and minimizing their repercussions [6]. Specifically, emergency brigade training stands as a cornerstone of safety studies, equipping recruits with essential knowledge while updating the skill set of existing personnel [7]. Although traditional safety training methods, including manuals, videos, lectures, and practical exercises, have long been utilized [8], replicating extreme real-world scenarios often proves unfeasible due to logistical constraints, cost implications, and safety considerations. Alternatively, the recent integration of virtual reality (VR) into safety training has emerged as a versatile tool, facilitating the design of immersive training systems and enabling studying human behavior in emergencies [9].

Thus, this study aims to propose an immersive gaming experience incorporating visual and auditory elements and simulating accidental scenarios involving hazardous chemical releases. The aim is to utilize such a game as an alternative training mechanism for emergency response brigades. This immersive simulation encapsulates the challenges encountered in refineries while safeguarding participants from the inherent risks of real-world accidents, potentially enhancing emergency response team decision-making capabilities and supplementing traditional training approaches.

The remainder of this paper is organized as follows. Section 2 provides related studies to this article. Section 3 presents the theoretical framework used for the development of the game. Section 4 describes the serious game and its characteristics. Section 5 discusses the proposed methodological aspects for the simulation, followed by conclusions in Section 6.

2. RELATED STUDIES

2.1. Accidents in the Oil and Gas Industry

Over the years, several serious accidents have occurred in industries with complex and critical processes, such as oil and gas [10]. Therefore, it is essential to research why these accidents are recurrent. [11] Conducted a study that identified and evaluated the main safety factors contributing to accidents in Malaysia's downstream oil and gas construction projects. Using a quantitative approach with pilot and primary surveys, the data were analyzed through exploratory factor analysis (EFA) and structural equation modeling (SEM). The results revealed critical safety factors such as inadequate training, insufficient procedures, and inadequate supervision, which are the main contributors to accidents in this sector. The findings provide valuable insights into the most important safety elements in oil and gas construction in Malaysia and can help improve both theoretical and practical aspects of safety.

The study by [12] addresses the rise in occupational accidents globally over recent decades, noting human error as a primary cause. Human error is described as inappropriate decisions or behaviors by workers leading to negative impacts such as emergencies, loss of life, property damage, environmental harm, and economic setbacks. In the oil and gas (O&G) industry, human error accounts for over 70% of accidents attributed to handling hazardous chemicals and risky operations. Despite this, few studies focus on human error within the O&G sector. Thus, this study aims to highlight human error's role in O&G industry accidents through an extensive literature review. It provides a general and industry-specific definition of human error, discusses its leading causes, and examines Bahrain's O&G industry as a case study. Recommendations to reduce human error-related accidents are explored.

Additionally, [13] addresses the Major Accident Reporting System (MARS) established by the European Commission, which collects information on severe accidents in industrial facilities involving hazardous chemicals in the Member States. MARS aims to improve accident prevention policies and practices by sharing the experience gained from these events. By mid-1991, 111 accidents had been registered in MARS by the National Competent Authorities, highlighting the importance of managerial attitude and structured risk identification procedures for effective accident prevention. More than one-third of the accidents occurred in oil and gas facilities.

2.2. VR For Training

Workplace safety is a global concern and adequate training plays a crucial role in accident prevention and reducing their impacts. VR has emerged as a promising approach to make safety training more interactive and engaging. For example, the study by [8] conducted in the chemical industry, investigated the effectiveness of safety training by comparing traditional methods with VR. The results indicated that VR training promoted greater engagement and motivation among participants compared to conventional methods. However, some limitations were identified, such as usability issues and fatigue, highlighting the importance of addressing these issues to ensure the effectiveness of VR training.

Another study [14] investigated the effectiveness of combining serious games (SG) and non-immersive VR in improving evacuation behavior in urban floods. The results demonstrated that using SG in combination with non-immersive VR training can significantly increase participants' knowledge and self-efficacy in flood disaster situations, indicating overall adherence between behaviors observed in VR and real-world scenarios.

Within the process industry context, the study by [15] introduces the STAMP-Game model to analyze accidents in oil and gas storage and transportation systems. The approach combines principles of system and control with game theory, enabling the evaluation of strategies by supervisory and supervised entities. The results provide insights to enhance safety and reduce costs associated with regulatory violations.

In addition to the studies presented, the research by [16], which developed a surgical training simulation using Epic Games' Unreal Engine 5 (UE5), highlights the essential role of immersive simulations in creating realistic 3D environments. It emphasizes the potential of UE5 to enhance surgical training. Furthermore, it underscores the importance of extended reality (XR) technologies, such as virtual and augmented reality, for enabling more natural and effective interactions in surgical training. Furthermore, a systematic review of the use of VR in safety training [17] highlighted a growing trend in VR use since 2013. This study's qualitative analysis and meta-analyses showed that VR training outperformed traditional knowledge acquisition and retention methods and provided a better user experience. These findings underscore the importance of further investigating the factors influencing the effectiveness of VR training and emphasize the potential of this technology to improve workplace safety.

Based on the studies presented, it is clear that gamification and VR are becoming prominent approaches in training, and the use of these tools is increasingly expected. Therefore, the next topic presents the tools used and the reasons for their selection.

3. THEORETICAL BACKGROUND

3.1. Unreal Engine

The Unreal Engine, developed by Epic Games [18], is a game development engine tailored for VR and augmented reality (AR) applications. Boasting a rich array of tools and features, the Unreal Engine empowers developers to craft top-tier interactive experiences across many platforms, including PCs, consoles, mobile devices, and VR environments.

The Unreal Engine's heart lies in its capacity to generate lifelike graphics and intricate environments, owing to its advanced rendering engine and robust support for real-time technologies. Furthermore, it offers a comprehensive suite of development tools encompassing content creation utilities, backing for the C++ programming language, and seamless integration with various third-party libraries and services, such as the Blueprints programming system (refer to subsection 3.2). Beyond gaming, the Unreal Engine applies in diverse fields like architectural visualization, training simulations, film production, and visual effects in cinema and television.

The decision to employ the Unreal Engine as the development platform for a serious game (SG) stemmed from its many benefits. Its capability to fashion realistic virtual worlds and its compatibility with VR technologies facilitate the creation of immersive and interactive experiences for players. Additionally, the Unreal Engine's adeptness at accurately and engagingly simulating complex emergency scenarios further solidifies its suitability, providing participants with a training experience that closely mirrors reality.

3.2. Blueprints

Blueprint programming in the Unreal Engine [19] offers a visual and intuitive method for creating game logic, eliminating the need for traditional coding. Instead of writing lines of code, developers can employ a node-based graphical interface to connect logic blocks called "Blueprints."

These Blueprints comprise nodes representing various game elements, including characters, objects, and events. Developers can drag and link these nodes to establish logical workflows, such as character movement, player interactions, and responses to specific events. Each node features inputs and outputs, granting developers control over data flow and processing within the Blueprint. For instance, connecting an "event trigger" node to an "animation action" node can activate an animation when a player enters a designated game area. Furthermore, Blueprints can be reused and organized hierarchically, streamlining code maintenance and scalability.

Blueprint programming is particularly beneficial for artists and designers lacking experience in traditional coding, empowering them to create interactive features independently of dedicated programmers. Nonetheless, it remains robust enough for proficient programmers to utilize in rapid prototyping and refining game concepts.

3.3. Niagara System

The Niagara System [20] is an extension of Unreal Engine tailored for visual effects creation. It equips developers with a versatile toolset to generate and oversee real-time visual effects, including particles, fluids, smoke, fire, and more. Within Niagara, developers can craft highly customizable particles spanning various fluid types such as liquid, fire, and gas. Following particle creation, developers can fine-tune the effects by

incorporating velocity vectors to direct fluid motion, applying forces like wind force, adjusting fluid density, and exploring a multitude of other available options within the extension.
Operating on a node-based graph logic system akin to Blueprints, the Niagara System empowers developers to craft and manipulate visual effects in a customizable and interactive manner. Featuring an intuitive interface, developers can seamlessly connect and configure different modules to precisely control the behavior and appearance of visual effects.

4. APPLIED METHODOLOGY

4.1 Experiment Setup

The context of the immersive game takes place in an oil refinery. The incident involves a naphtha hydrotreating subsystem (NHT), which converts sour naphtha into a sweet naphtha product. Sour naphtha contains undesirable elements such as organic sulfur, nitrogen, and oxygen compounds, which can rapidly deactivate the catalyst in the platforming unit if not removed or converted. The transformation from sour to sweet naphtha occurs through three main stages: stripping, reaction, and fractionation. Specifically, the leak point is between the recycle pumps and the heat exchangers (Figure 1).

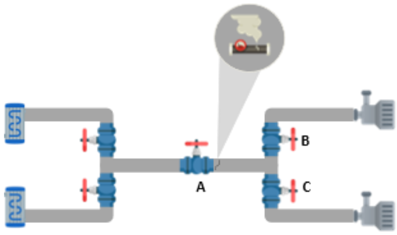

Figure 1. Subsystem applied in the immersive game.

In an industrial environment, the uncontrolled release of flammable and toxic materials can lead to catastrophic accidents, such as explosions and fires. When the emergency brigade receives an accident alert, they must act quickly to control the release and prevent it from escalating into worse consequences. Thus, after the alert, the emergency brigade must proceed to the location indicated as the leak point. Upon arrival, they need to control the leak, avoid areas with higher material concentrations, and ensure there are no potential ignition sources. The leak point will be randomly chosen and communicated to the player, as shown in Figure 2.

Figure 2. Example of gas leakage in a refinery on Unreal Engine 5

The setup and simulation procedure takes around 30 minutes, with participants requested beforehand to abstain from consuming coffee, energy drinks or other stimulants. During the simulation, the game character is an emergency response brigade member who notices the leakage alert and must perform all necessary actions to control the accidental scenario under controlled physical and emotional conditions (monitored biological signals) and at the appropriate moment. The character needs to stop the leakage within the specified time and avoid high-concentration areas while performing the following actions: reading a message indicating a leakage point, going to the leakage point within a specified time, and then closing the valves to stop the flow of naphtha. The game should display the leakage point, material concentration in the environment, and wind direction to the player. At the end of the VR simulation, participants will be asked to perform self-assessments through questionnaires, allowing for a subjective evaluation of situational awareness levels and cognitive demand. At the operational level, the simulation is set up to follow.

4.1.1. *Level Blueprint*

At the beginning of the game, the player must select the turn when the leak will occur. This can be at night, when the player will have to use a flashlight to see due to the lack of natural light, or during the day (Figure 3), when there will be sunlight. After the selection, the Level Blueprint logic will be activated.

Figure 3. Difference between day and night on Unreal Engine 5

The primary blueprint of the game that carries the entire sequence is detailed as follows:
The first node, "Event BeginPlay," triggers the game sequence as soon as the player plays. Then, a node randomly selects a number (0 or 1) to determine the location of the gas leak (Figure 4).

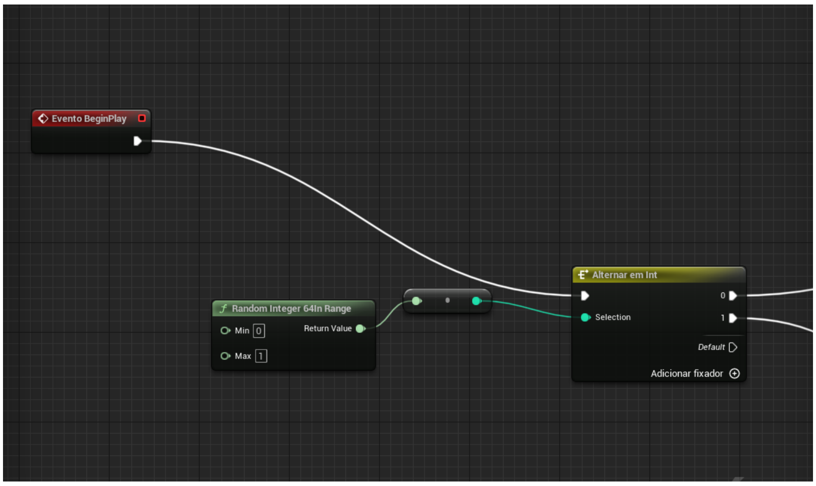

Figure 4. Screenshot from the beginning of the level Blueprint on Unreal Engine 5

Additionally, a boolean variable named "smoke" was created, with its default state set to "TRUE" (Figure 5). If the timer exceeds the configured limit and the boolean variable is still "TRUE," an explosion will occur, and the player will lose the game.

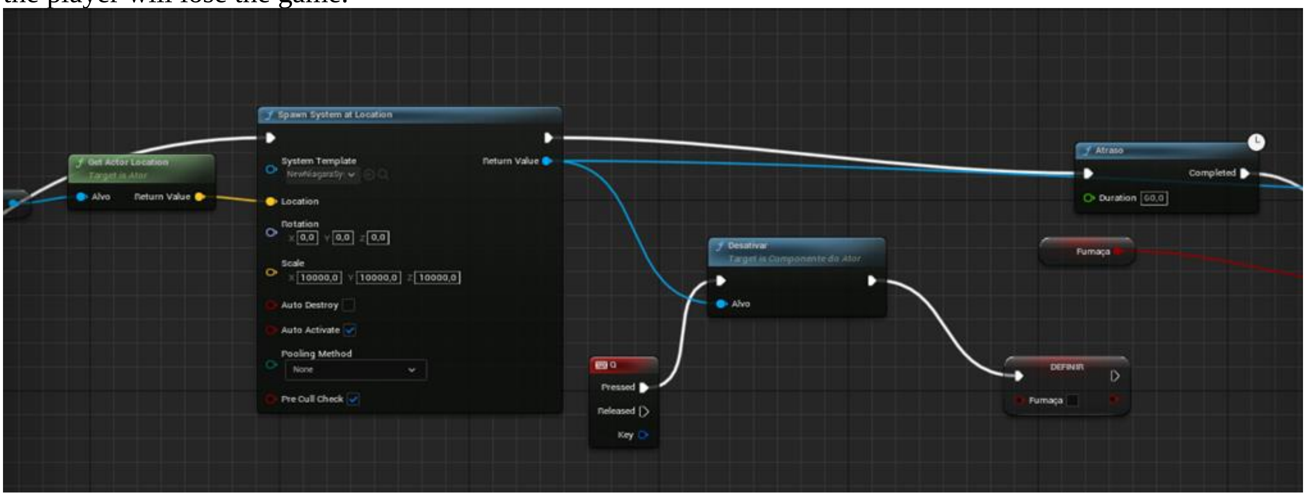

Figure 5. Figure 5. Screenshot from the middle of level Blueprint on Unreal Engine 5

Suppose the player finds the location of the gas leak and acts quickly to stop it (by pressing the Q key). In that case, the "smoke" variable will be set to "FALSE," halting the leak, preventing the explosion, and allowing the player to finish the game successfully.

4.1.2. *Level Niagara system*

For the game development, two types of leaks were introduced: one type is in the form of a jet of fire due to the high pressure of the leaking gas, where if the leak is not stopped, the consequence will be an explosion, and the other is a cloud of gas, where if it is not stopped, the consequence will be a fire without an explosion. These leaks were created using the Niagara System (Figure 6).

After a series of initial Niagara tests, fifty realistic methane gas clouds were made available, which will be implemented into the game (Figure **7**). Initially, a particle system was created within this extension of Unreal, and the "smoke" material (smoke texture provided within Unreal) was added. Additionally, some initial tests were conducted, altering the wind force on the particles, the initial speed of the leak, and other available options. For the next stage, the plan is to integrate the Niagara System with clouds generated from simulations involving Computational Fluid Dynamics (CFD). Creating an "empty" emitter within the Niagara will be necessary, where the "smoke" material will be initialized. Then, two configurations will be added: "sample static mesh" and "static mesh location."

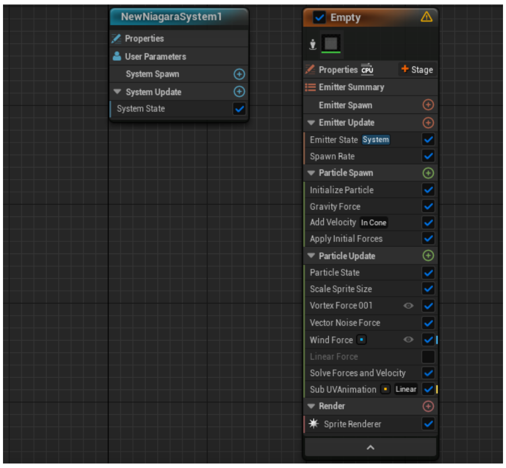

Figure 6. Screenshot of Niagara´s System editor on Unreal Engine 5

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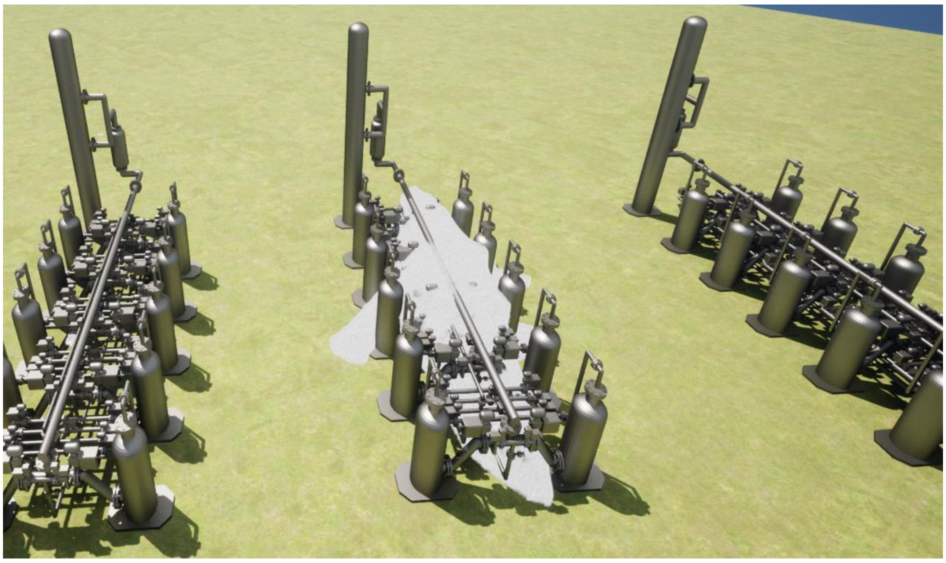
Figure 7. Example of the gas cloud developed using CFD on Unreal Engine 5

This way, a "smoke" particle system will be created in Niagara that follows the geometric shape of the realistic clouds. This process will be repeated for all available clouds, and then they will be placed on the map sequentially increasing over time.

The jet of fire in Niagara was created using the "fire" material available in Unreal, and a series of combinations of velocities and forces applied to the fluid to make the jet as realistic as possible (Figure 8). Later, in the same way as the gas cloud, realistic fire jets will be made available with the help of CFD and inserted into the game.

Figure 8. An example of the jet fire developed on the Unreal Engine 5

5. DISCUSSION

To create an authentic SG, it is necessary to consider the diversity of situations and challenges that may arise in real emergencies. Thus, some of the changes incorporated into the game aim to add complexity and realism to the player's experience. For example, at the start of the game, a logic was developed in the level blueprint to randomize the leak location between 2 possible spots. Later, four more possible locations will be added, increasing the variety. This randomization of leak locations emerges as an essential strategy. By introducing unpredictability in training scenarios, this approach prepares simulation participants to face unexpected emergencies, avoiding complacency with predictable patterns, and also lends realism to the simulation, considering that a leak should not constantly occur in the same place.

Furthermore, another scenario option is being incorporated into the game, which changes the shift in which the game takes place from a well-lit scenario to a poorly lit one. Including a nighttime scenario in the training further enhances the trainees' preparation. Darkness adds a layer of complexity, requiring professionals to familiarize themselves with lighting equipment and develop navigation skills in low-light conditions. This practice is essential, as emergencies can occur at any time of the day and responders must be prepared to act efficiently at any time.

Additionally, incorporating a leakage with a jet fire and another with a smoke cloud, using CFD, enriches the experience and enhances the realism of the simulation. Including these diverse scenarios is paramount, as each type of leak presents specific challenges that require different approaches and strategies from the brigade members. In the case of the jet fire, participants will have the opportunity to train in handling fire hoses to jreduce or redirect the jet fire and reach the valve to control the leak, all while managing the inherent risk of explosion. This develops essential skills for fire fighting and containment. On the other hand, the leak with a smoke cloud emphasizes the need for adequate ventilation techniques and respiratory protection equipment.

Finally, realistic clouds generated from CFD and 3D geometries of tanks and reactors consistent with reality complete the training experience, providing an accurate representation of the refinery and leak dynamics. This allows trainees to better understand fluid behavior, supporting decision-making.

6.FINAL CONSIDERATIONS

The study highlights VR as an innovative and effective alternative for safety training and the technological advancements that make this possible. The proposal of a game to enhance training offers an engaging and practical approach. It allows participants to face challenging situations in a simulated manner, preparing them for real emergencies, without being exposed to the actual risks in the oil and gas industry.

The game also introduces significant innovations and challenges for the type of industry and training, such as the introduction of varied and unpredictable scenarios that are dynamic and flexible, reflecting the complexity of real emergencies. This approach keeps participants engaged and prepares them to handle various situations, ensuring an effective and safe response in an emergency. The challenges presented by the game have been worked on collaboratively by the Center for Risk Analysis, Reliability Engineering and Environmental Modeling (CEERMA) at the Federal University of Pernambuco and the Laboratory of Industrial Risk Analysis and Environmental Safety (L4R1S4) at the State University of Campinas.

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8.REFERENCES

[1] Burgherr, P., & Hirschberg, S. (2008). A Comparative Analysis of Accident Risks in Fossil, Hydro, and Nuclear Energy Chains. Human and Ecological Risk Assessment: An International Journal, 14(5), 947–973. https://doi.org/10.1080/10807030802387556

[2] Chen, J., Chen, H., Shi, J., Yan, T., Gu, M., & Huang, X. (2023). Factor diagnosis and governance strategies of ship oil spill accidents based on formal concept analysis. Marine Pollution Bulletin, 196, 115606. https://doi.org/10.1016/J.MARPOLBUL.2023.115606

[3] Adedoyin Tolulope Oyewole, Chinwe Chinazo Okoye, Onyeka Chrisanctus Ofodile, Olubusola Odeyemi, Omotoya Bukola Adeoye, Wihelmina Afua Addy, & Yinka James Ololade. (2024). HUMAN RESOURCE MANAGEMENT STRATEGIES FOR SAFETY AND RISK MITIGATION IN THE OIL AND GAS INDUSTRY: A REVIEW. International Journal of Management & Entrepreneurship Research, 6(3), 623–633. https://doi.org/10.51594/ijmer.v6i3.875

[4] Almeida, A. G. de, & Vinnem, J. E. (2020). Major accident prevention illustrated by hydrocarbon leak case studies: A comparison between Brazilian and Norwegian offshore functional petroleum safety regulatory approaches. Safety Science, 121, 652–665. https://doi.org/10.1016/J.SSCI.2019.08.028

[5] Kalantarnia, M., Khan, F., & Hawboldt, K. (2010). Modelling of BP Texas City refinery accident using dynamic risk assessment approach. Process Safety and Environmental Protection, 88(3), 191–199. https://doi.org/10.1016/J.PSEP.2010.01.004

[6] Shojaei, F., Qaraeian, P., Firoozbakht, A., Chhabra, D., & Jahangiri, K. (2023). The necessity for an integrated Emergency Operations Center (EOC) among first responders: Lesson learned from two Iranian railway accidents. Heliyon, 9(5), 15599. https://doi.org/10.1016/j.heliyon.2023.e15599

[7] Zarei, E., Khan, F., & Abbassi, R. (2023). How to account artificial intelligence in human factor analysis of complex systems? Process Safety and Environmental Protection, 171, 736–750. https://doi.org/10.1016/J.PSEP.2023.01.067

[8] Chan, P., van Gerven, T., Dubois, J. L., & Bernaerts, K. (2023). Study of motivation and engagement for chemical laboratory safety training with VR serious game. Safety Science, 167. https://doi.org/10.1016/j.ssci.2023.106278

[9] Rahouti, A., Lovreglio, R., Datoussaïd, S., & Descamps, T. (2021). Prototyping and Validating a Non-immersive Virtual Reality Serious Game for Healthcare Fire Safety Training. Fire Technology, 57(6), 3041–3078. https://doi.org/10.1007/s10694-021-01098-x

[10] Sadeghi, R., & Goerlandt, F. (2023). Validation of system safety hazard analysis in safety-critical industries: An interview study with industry practitioners. Safety Science, 161, 106084. https://doi.org/10.1016/J.SSCI.2023.106084

[11] Rasmussen, H. B. (2013). Towards zero vision. The possibilities and challenges for accident prevention in the Danish oil and gas industry. Archives Des Maladies Professionnelles et de l'Environnement, 74(5), 554. https://doi.org/10.1016/J.ADMP.2013.07.106

[12] Alkhldi, M., Pathirage, C., & Kulatunga, U. (n.d.). THE ROLE OF HUMAN ERROR IN ACCIDENTS WITHIN OIL AND GAS INDUSTRY IN BAHRAIN.

[13] Drogaris, G. K. (1991, November 11). Major Accidents in Oil and Gas Industries. All Days. https://doi.org/10.2118/23216-MS

[14] D'Amico, A., Bernardini, G., Lovreglio, R., & Quagliarini, E. (2023). A non-immersive virtual reality serious game application for flood safety training. International Journal of Disaster Risk Reduction, 96. https://doi.org/10.1016/j.ijdrr.2023.103940

[15] Meng, H., An, X., Li, D., Zhao, S., Zio, E., Liu, X., & Xing, J. (2023). A STAMP-Game model for accident analysis in oil and gas industry. Petroleum Science. https://doi.org/10.1016/J.PETSCI.2023.12.002

[16] El-Wajeh, Y. A. M., Hatton, P. v., & Lee, N. J. (2022). Unreal Engine 5 and immersive surgical training: translating advances in gaming technology into extended-reality surgical simulation training programmes. In British Journal of Surgery (Vol. 109, Issue 5, pp. 470–471). Oxford University Press. https://doi.org/10.1093/bjs/znac015

[17] Scorgie, D., Feng, Z., Paes, D., Parisi, F., Yiu, T. W., & Lovreglio, R. (2024). Virtual reality for safety training: A systematic literature review and meta-analysis. Safety Science, 171, 106372. https://doi.org/10.1016/J.SSCI.2023.106372

[18] Epic Games. (2024). *Overview of Niagara Effects for Unreal Engine*. Retrieved August 10, 2024, from https://dev.epicgames.com/documentation/en-us/unreal-engine/overview-of-niagara-effects-for-unreal-engine?application_version=5.3

[19] Epic Games. (2024). *Getting Started with Blueprints*. Retrieved August 10, 2024, from https://docs.unrealengine.com/4.27/en-US/ProgrammingAndScripting/Blueprints/GettingStarted/

[20] Epic Games. (2024). *Unreal Engine Intro to Niagara*. Retrieved August 10, 2024, from https://dev.epicgames.com/community/learning/tutorials/8B1P/unreal-engine-intro-to-niagara