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| Journal Name: | [**Journal of Engineering Research and Reports**](https://journaljerr.com/index.php/JERR) |
| Manuscript Number: | **Ms\_JERR\_136698** |
| Title of the Manuscript: | **A Multiscale Approach to Cyber-Mechanical Threat Modeling for Predicting and Preventing Failures in Critical Energy Infrastructure** |
| Type of the Article |  |

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| PART 1: Comments | | |
|  | Reviewer’s comment **Artificial Intelligence (AI) generated or assisted review comments are strictly prohibited during peer review.** | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.** | The article addresses the growing convergence of cyber and mechanical domains of critical energy infrastructure, highlighting the heightened risk and impact of cyber threats, particularly ransomware attacks. The study proposes a novel multiscale AI/ML-based framework for modelling and enhancing cyber-mechanical resilience to fill substantial gaps in current resilience assessment approaches, offering a comprehensive solution that integrates both synthetic and real-world data. The article can support future design, monitoring and protection strategies for critical energy infrastructure. |  |
| **Is the title of the article suitable?**  **(If not please suggest an alternative title)** | Predicting and Preventing Failures in Energy Systems: A Multiscale Cyber-Mechanical Approach  A concise title like above might be more impactful. |  |
| Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here. | 1. Importance of addressing cyber-mechanical threats can be highlighted 2. Scope can be clear if the critical energy infrastructure that is covered in the study is mentioned in the abstract 3. A real example or success story would help 4. Mention of limitations and future areas for further research can be beneficial for readers |  |
| Is the manuscript scientifically, correct? Please write here. | It is well structured and provides a good analysis of the proposed framework. Yes, it is scientifically correct. |  |
| **Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.** | The references list is extensive. |  |
| Is the language/English quality of the article suitable for scholarly communications? | The terminology, technical language and references meet the standards for scholarly communications. |  |
| Optional/General comments |  |  |

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| **PART 2:** | | |
|  | Reviewer’s comment | **Author’s Feedback** (It is mandatory that authors should write his/her feedback here) |
| **Are there ethical issues in this manuscript?** | No ethical issues identified. |  |

**Reviewer Details:**

**Vijay Kartik Sikha, India**