SECURITY PROJECTS FOR A BRAZILIAN NUCLEAR FACILITIES

International Conference on Nuclear Security 2020

IAEA-NSNS (ICONS2020@iaea.org)

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1/3

Starting Point | Presenting in more detail | Zooming in | Navigation

INTRODUCTIONn

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In defense of power plants and nuclear facilities, in response to the growing threats from cyberspace, investment in computer simulations, regulations and technologies to protect and enhance the cybersecurity of I&C systems has increased in Brazil. others.

Purpose
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Develop a Nuclear Physical Security Project involving events that define all its Security areas and their potential coverage - such as nuclear terrorism, sabotage, theft, among others - alerting society to the risks and guiding prevention and detection actions to the various types of threats.

Purpose
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To build appropriate Nuclear Physical Security strategies and systems within the Brazilian reality, not only regarding Physical Protection, but also Nuclear Material Control and Accounting and Information Security and Cyber Security, according to the rules of the National Nuclear Energy Commission (CNEN) and in view of what is established by the International Atomic Energy Agency (IAEA).

Cyber Attack to NPP

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The NPP is a complex system consisting of various subsystems, such as nuclear reactor, heat transport system, steam generators, electrical generator, power transmission, etc., which resemble the physical parts of the NPP.

In general, the cyber-attacks can be roughly classified into three types: attacks against available of service, attacks against data integrity and attacks against confidentiality. The first type is also called availability attacks

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Presenting in more detail
Zooming in
Navigation

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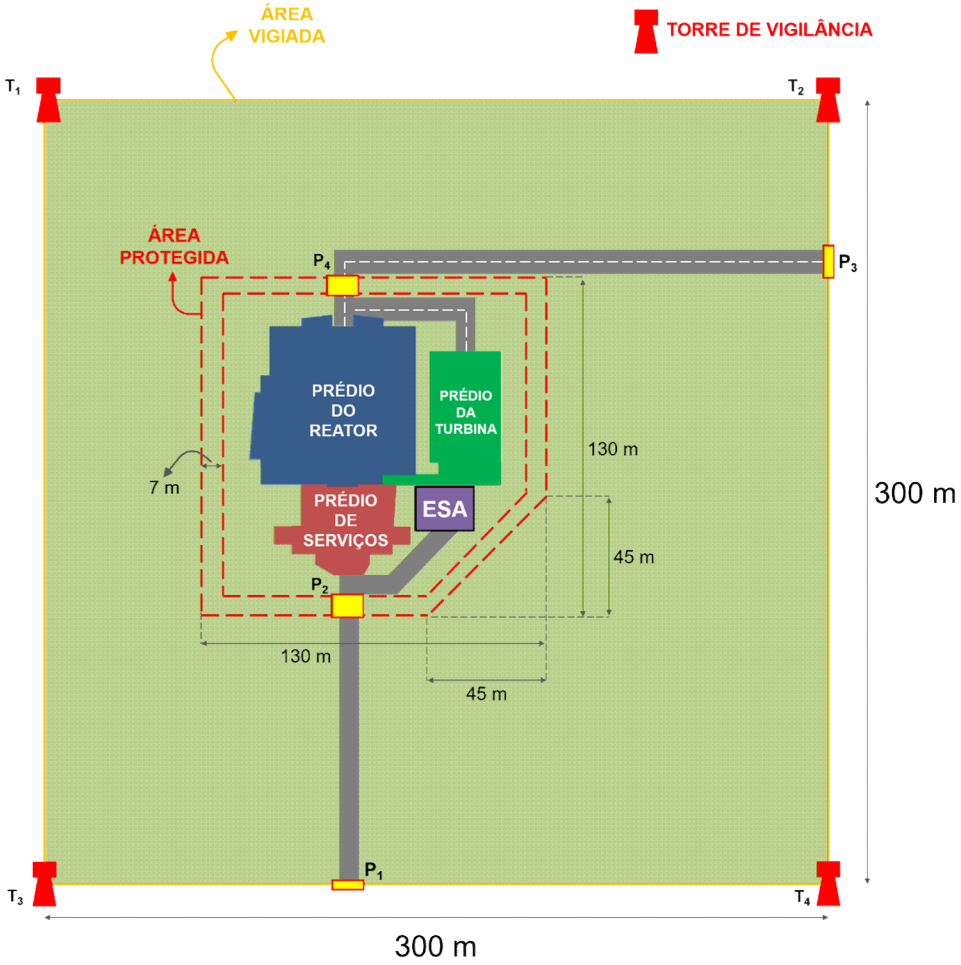

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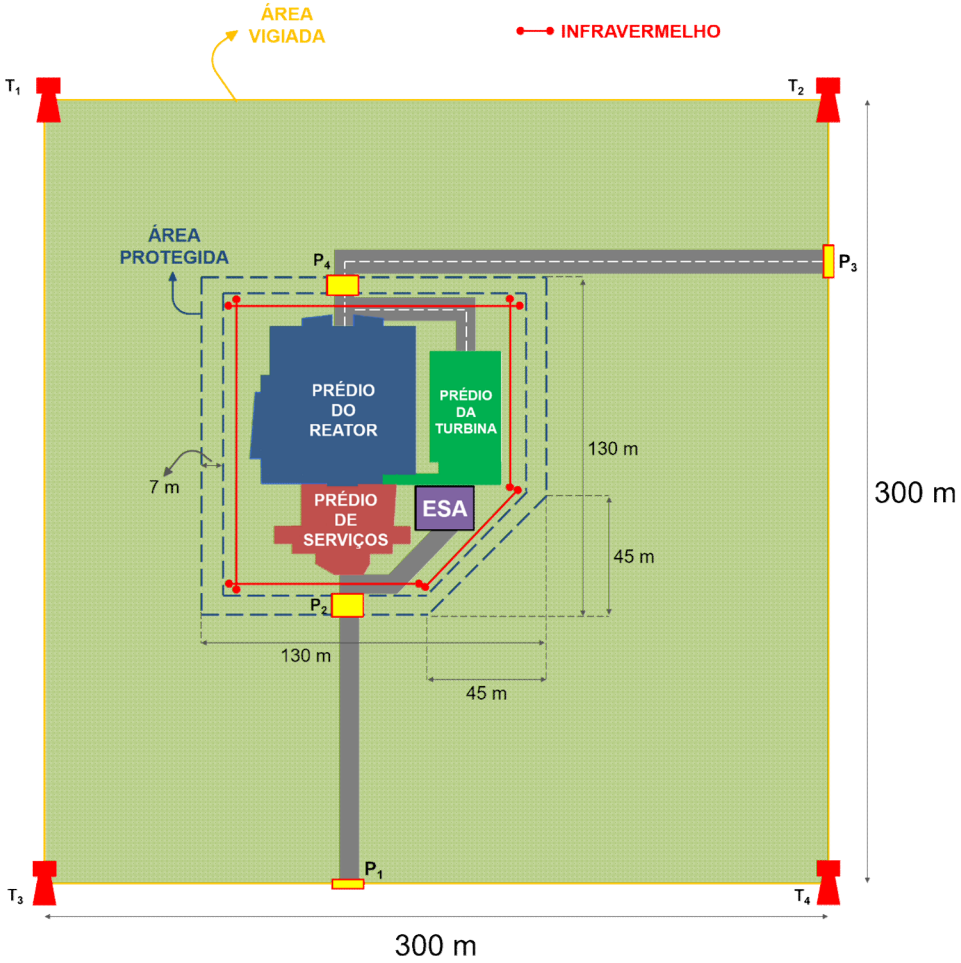

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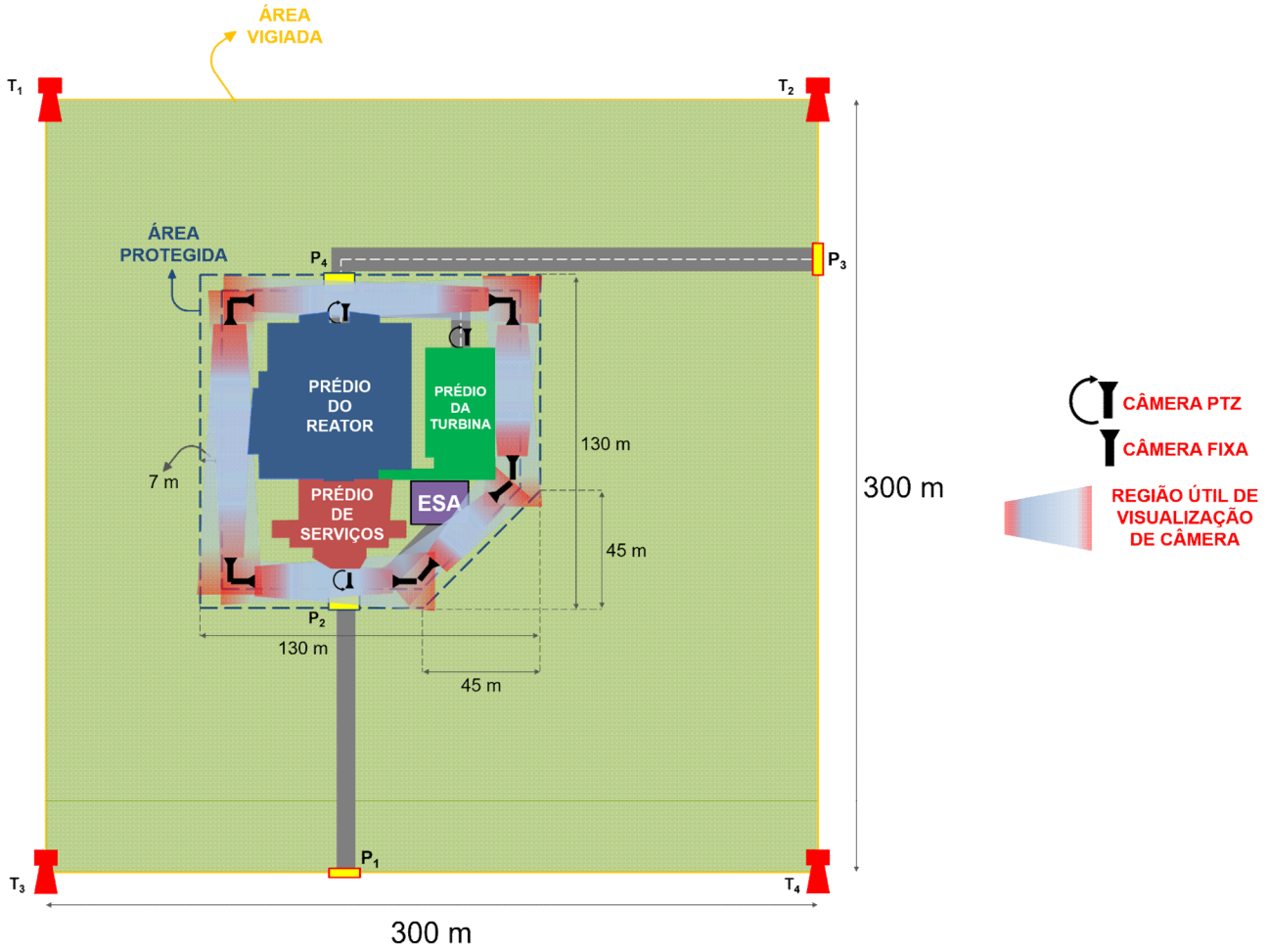

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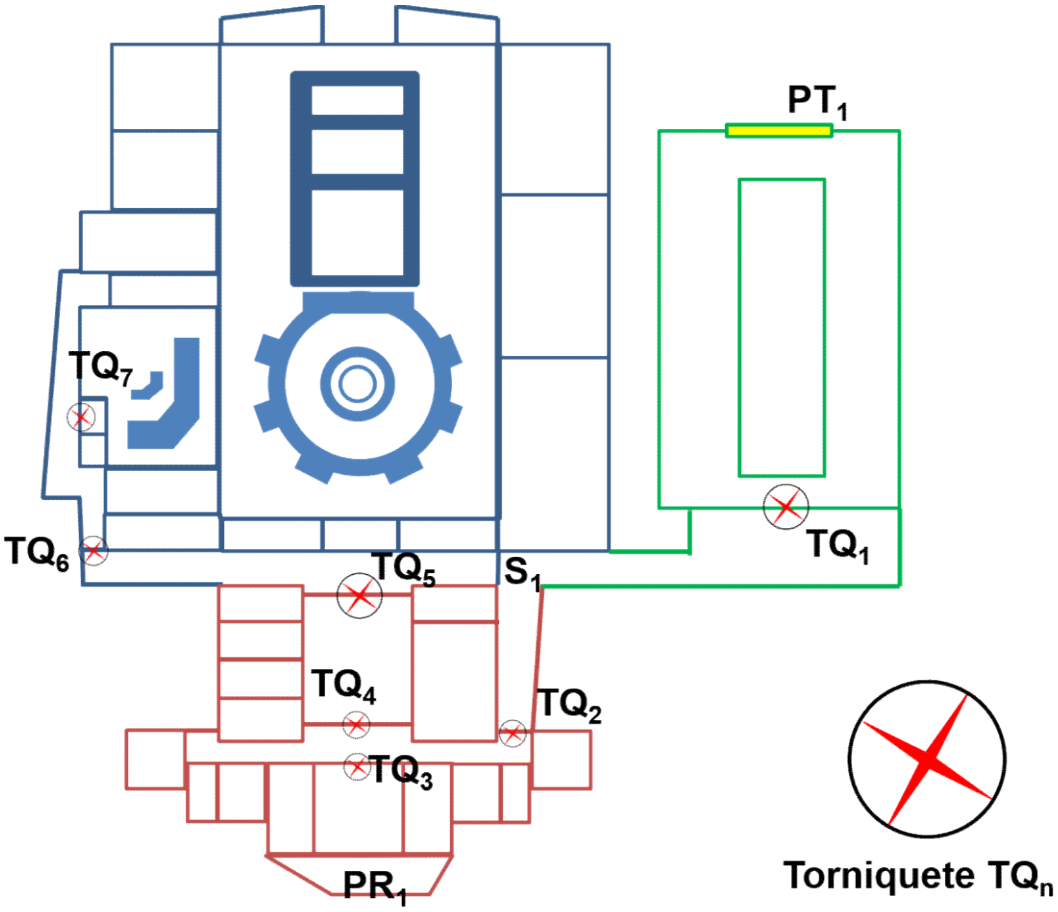

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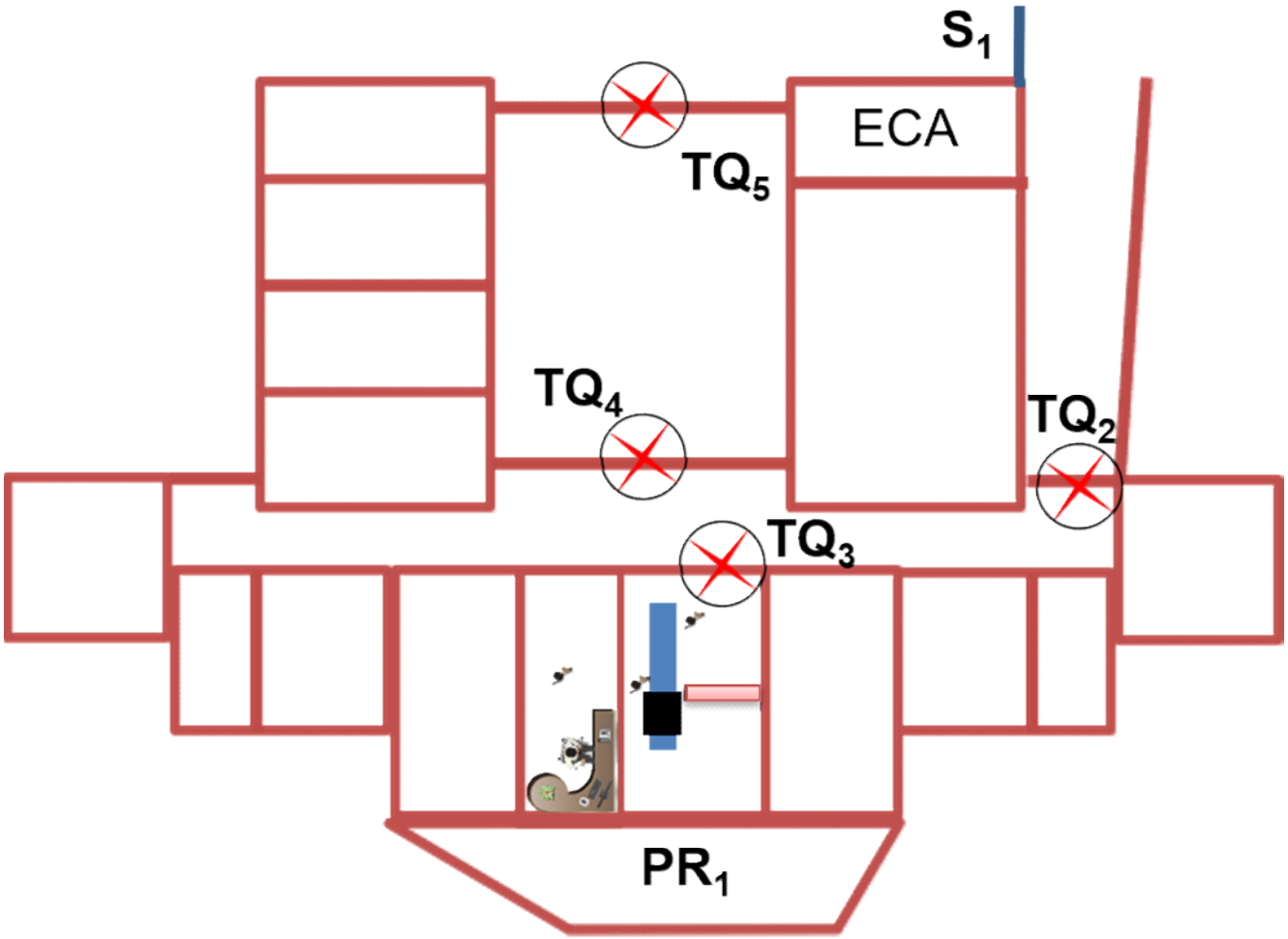

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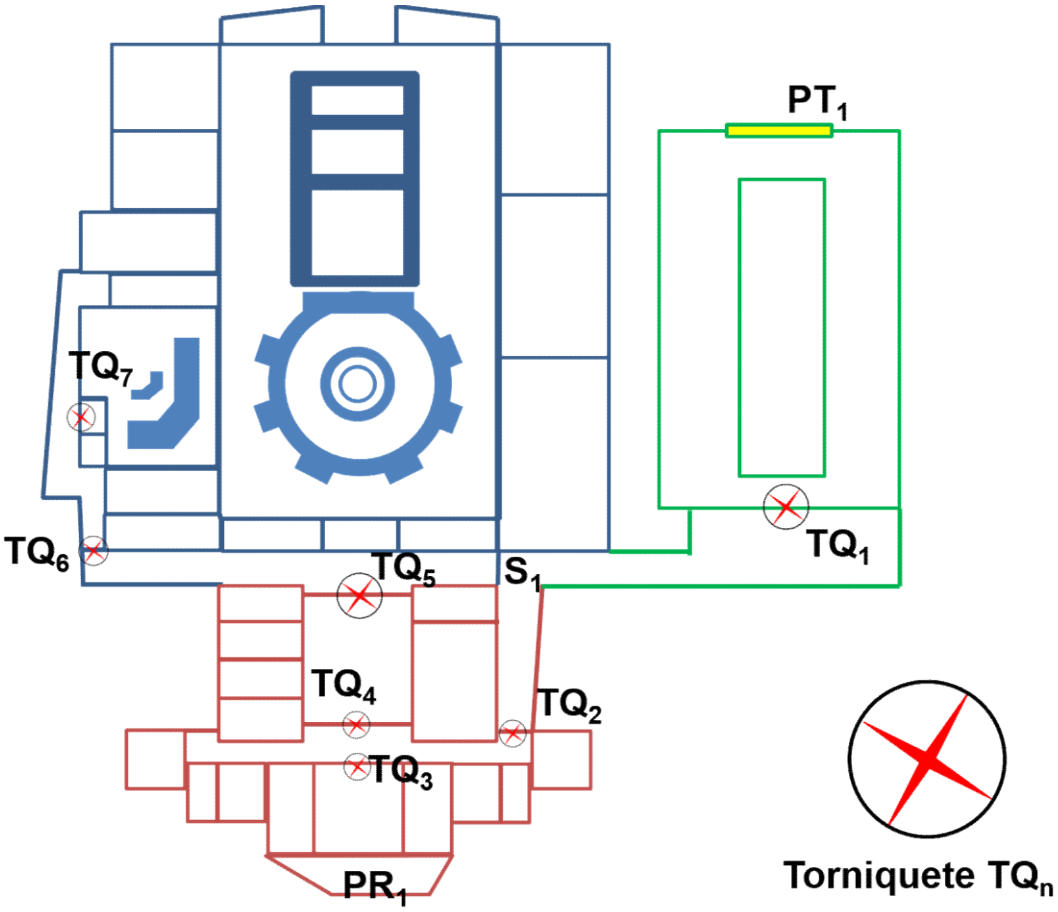

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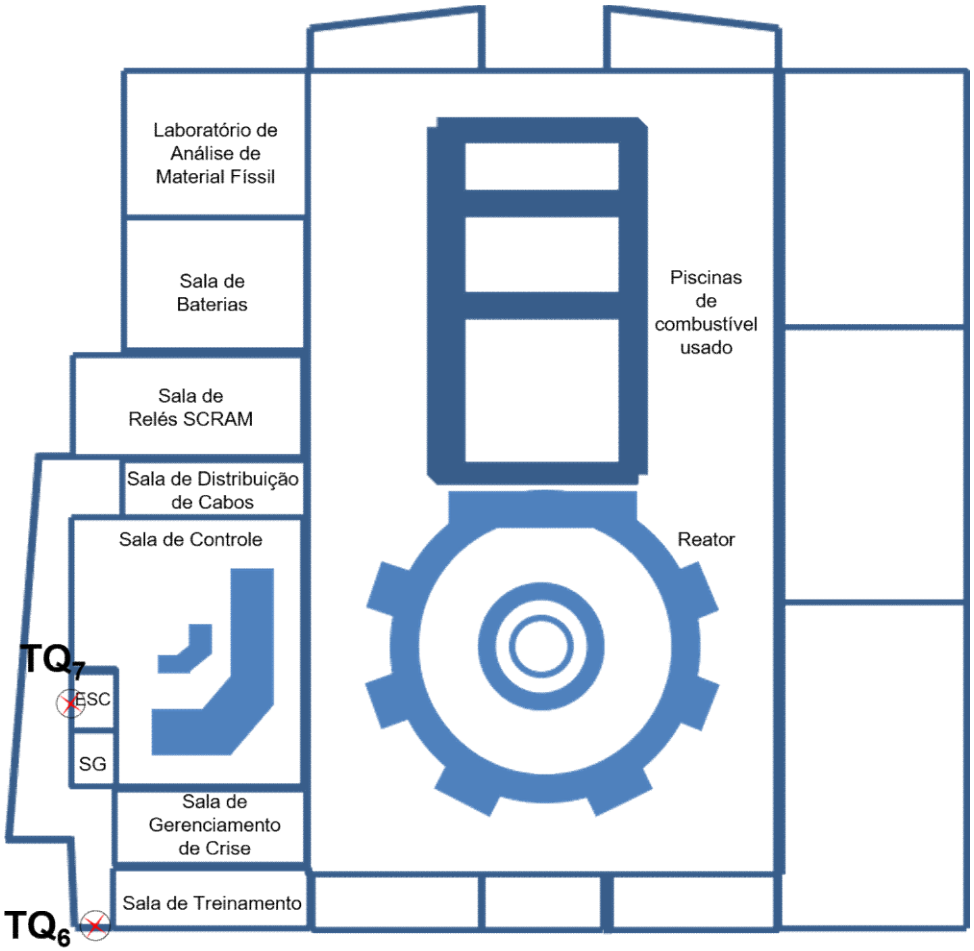

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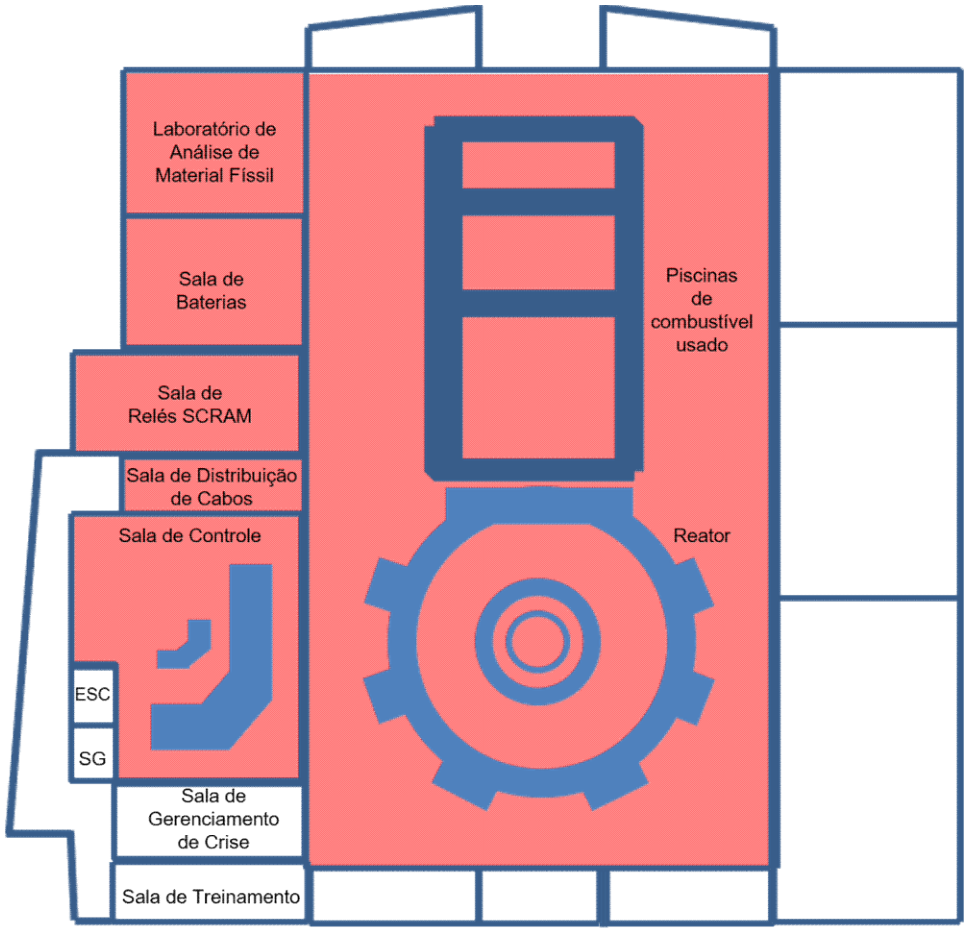

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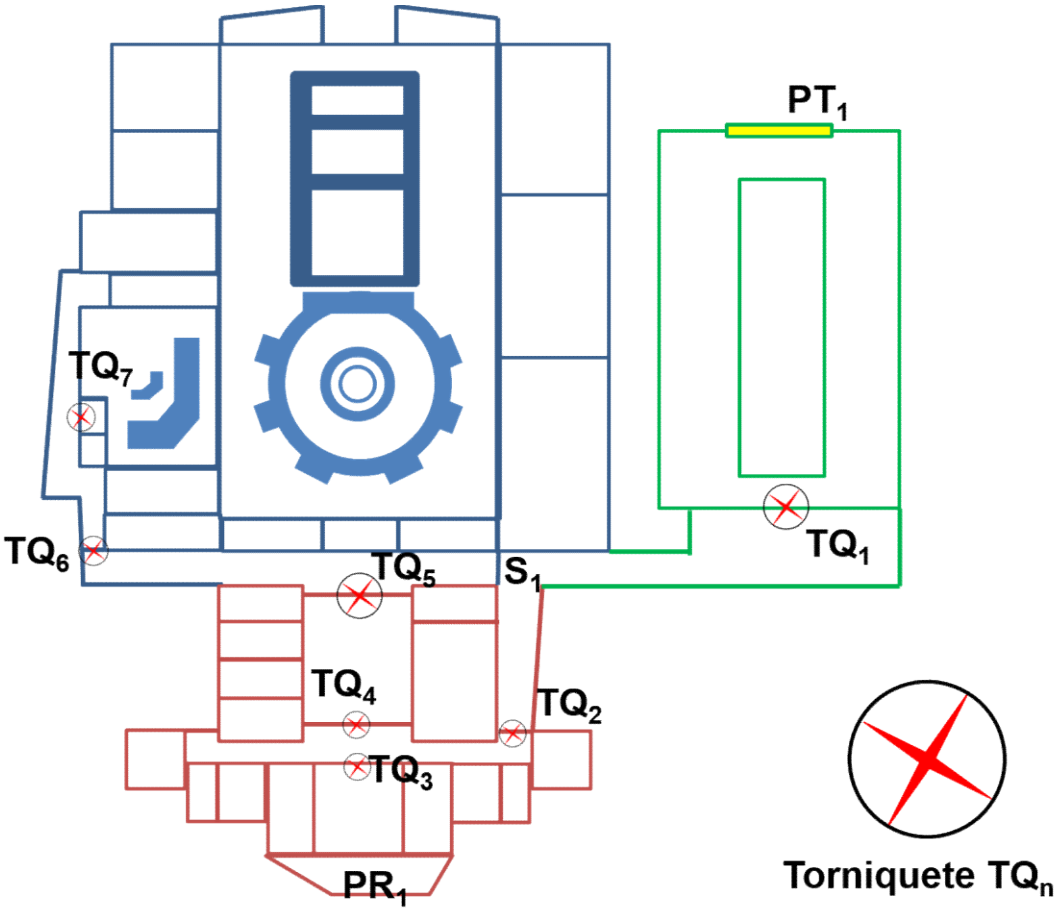

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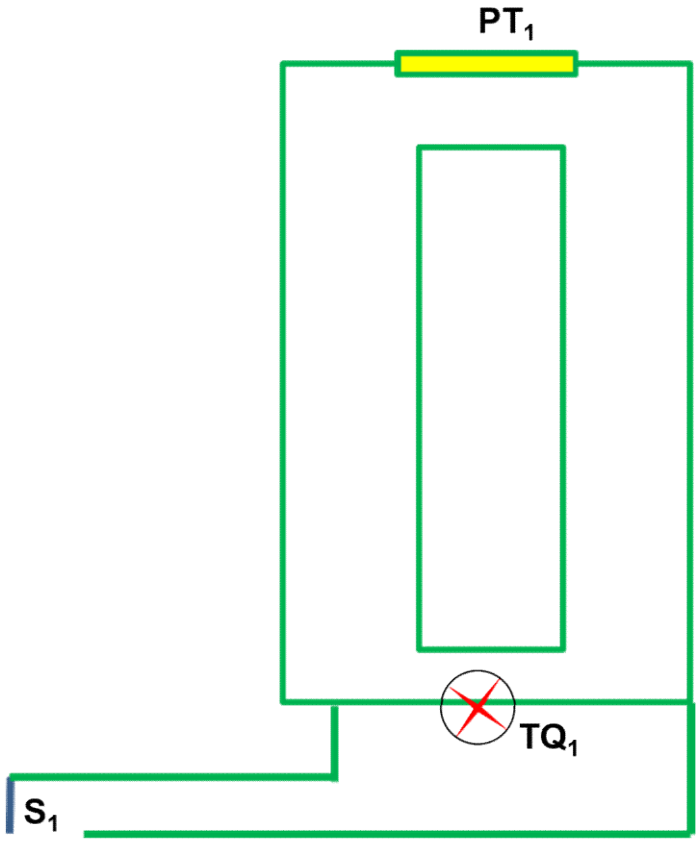

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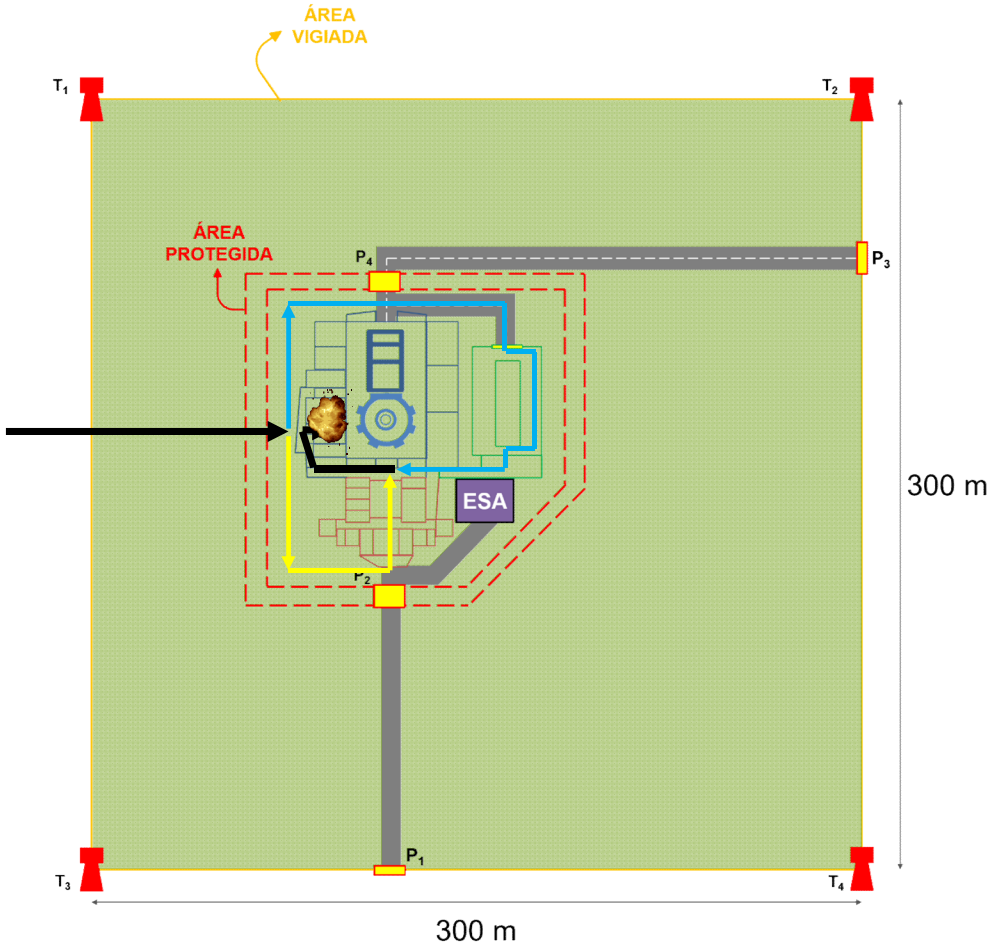

SisPF Project for a Nuclear Installation

- Observing the Global Likelihood of Effectiveness of the Physical Protection System (PE) after the four improvements

P_I	Number of Responders	P_N FOR 6 ADVERSARIES	$P_E=P_I*P_N$	P_E
0,92	9	0,91	0,872534256	87%

- Meets 85% Efficiency Target

Conclusion

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Understanding what cyber attacks are, how they are implemented, what their consequences are, how to analyze, evaluate and even predict how cyber threats, what protection mechanisms, and how to optimally implement them, are beneficial to both. . researchers and professionals. In this article, we present an overview of the above aspects related to NPP cybersecurity in recent years. The results of this review show some potential approaches for future research'. Using the approach allows us to identify vulnerabilities of the model itself - in this case, or DEPO process - given as requirements of each of the Nuclear safety areas. From the results obtained, it became evident that the adoption of a methodology applied in performance represents a significant evolution in the evaluation of physical protection systems.

Starting Point
Presenting in more detail
Zooming in
Navigation