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Servicios de Protección Eléctrica

ONE LINE DIAGRAMS UPDATE

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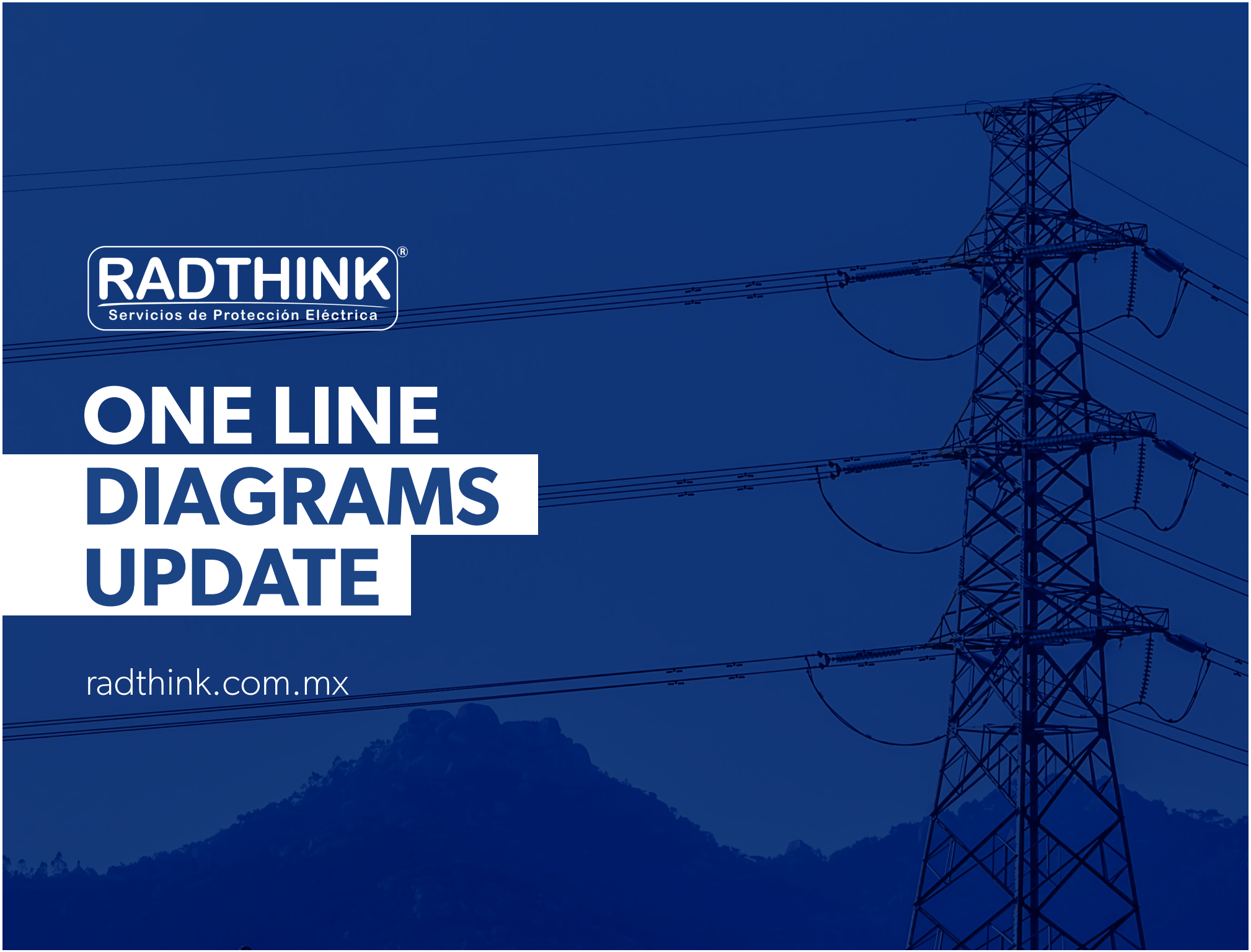

UPDATE OF ONE LINE DIAGRAMS IN INDUSTRIAL SYSTEMS

OBJECTIVES

Represent with adequate detail the elements of the plant's electrical system so that users and operators can consult accurate information, carry out operations or carry out work safely.

ELEMENT REPRESENTATION

The one-line diagrams represent electrical elements of the system that are of greater importance for users and for practical requirements, maneuvers and/or development of electrical engineering studies.

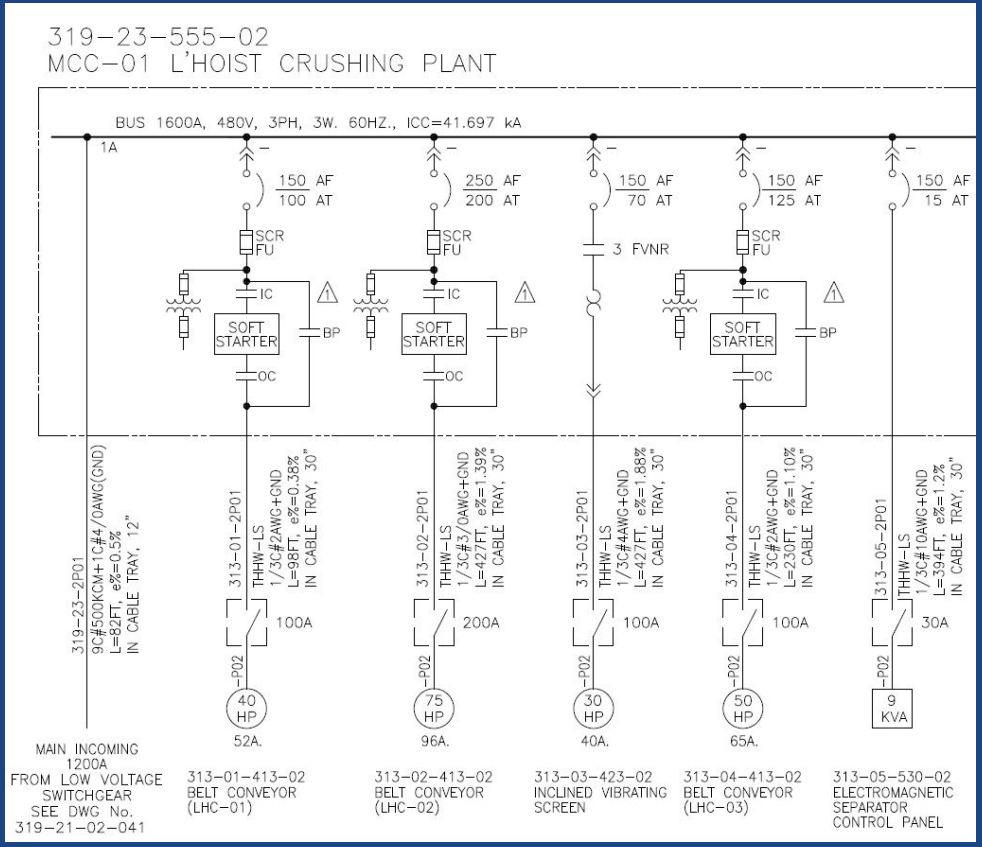

Fig. 1 Example of a low-voltage one line diagram.

BENEFITS

PEOPLE SAFETY

The personnel in charge of the electrical system in a plant must know precisely how each circuit of the system is formed, for example the loads that each circuit breaker feeds, so that they can do the work safely.

CONTINUITY IN THE OPERATION OF THE ELECTRICAL SYSTEM

Keeping up-dated the one-line diagrams increases the reliability of the operation, since it allows analyzing the behavior of the fault detection systems in a precise way to take the respective actions to correct and restore faulty circuits.

LABOR AUTHORITY'S REQUIREMENTS

One of the requirements of the labor authority´s towards the industry is the development of electrical safety studies (arc flash studies) and electrical safety labeling on equipment and panels. This type of study is based on updated one-line diagrams.

GRID CODE REQUIREMENTS

The one-line diagrams are an engineering document required as part of compliance with mandatory technical regulations such as the Grid Code. In such a way that when there is an audit by the external authority, the one-line diagrams will be used to audit the electrical system.

DEVELOPMENT OF ELECTRICAL ENGINEERING STUDIES

It is the basis for developing industry standard electrical engineering studies such as: **short circuit, protective relay coordination, capacitive compensation studies and harmonic pollution control.**


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