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| Course code | LSP351 |
| Course name | NR-10 - Basic Training - Electrical Instalation and Services Safety - 40h |
| Duration | 5 days |
| Target group | Industrial and maritime workers who deal directly or indirectly with electricity. |
| Prerequisites | <ul style="list-style-type: none"> - RG and CPF; - Passport (Expatriate); - Grade School; - Occupational Health Certificate (ASO) or certificate of good physical and mental health conditions. |
| Objective | Qualify workers from industrial and maritime areas who deal directly or indirectly with electricity. |
| Contents | <p>Theory-36 Hours</p> <ol style="list-style-type: none"> 1. Introduction to Safety with Electricity; 2. Risks in Facilities and Services with Electricity: <ol style="list-style-type: none"> a) electric shock, mechanisms and effects; b) electric arcs; burns and falls; c) electromagnetic fields. 3. Risk Analysis Techniques; 4. Electrical Risk Control Measures: <ol style="list-style-type: none"> a) de-energization; b) functional grounding (TN/TT/IT); protection; temporary c) equipotentialization; d) automatic feeding sectioning; e) leakage current devices; f) extra-low voltage; g) barriers and casings; h) blockages and impediments; i) obstacles and shields; j) insulation of the living parts; k) double or reinforced insulation; l) out-of-reach placement; m) electrical separation. 5. Brazilian Technical Standards - NBR of ABNT: NBR-5410, NBR 14039 and others; 6. Ministry of Labor Regulations: <ol style="list-style-type: none"> a) NR's; b) NR-10 (Safety in Electrical Installations and Services); c) qualification; license, empowerment, and authorization. 7. Collective Protective Equipment; 8. Personal Protective Equipment; 9. Work Routines - Procedures: <ol style="list-style-type: none"> a) de-energized installations; b) release for services; c) signaling; d) inspections of areas, services, tooling and equipment. 10. Electrical Installation Documentation; 11. Additional Risk: <ol style="list-style-type: none"> a) height; b) confined spaces; c) Hazardous areas; d) humidity; e) weather conditions. 12. Fire Fighting and Protection: <ol style="list-style-type: none"> a) basic concepts; |

- b) preventive measures;
 - c) extinguishing methods;
 - d) practices.
13. Accident of Electrical Origin:
- a) direct and indirect causes;
 - b) discussion of cases.
14. First Aid:
- a) concepts about injuries;
 - b) prioritization of care;
 - c) use of artificial respiration;
 - d) cardiac massage;
 - e) techniques for removal and transport of injured;
 - f) practices.
15. Responsibilities.

Practical - 4 Hours

- Fire Fighting;
- First Aid.

Technical Reference: NR-10; NBR 5410; NBR 14039.

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| Exam | Multiple choice exam with minimum passing grade of 60%. |
| | Validity: 2 years |
