

OPS-SH-0009

Non-Ionizing Radiation Policy

Revision History				
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1 Purpose

The purpose of this policy is to advise all Ampirical Solutions employees, at an awareness level, of the potential hazards associated with non-ionizing radiation, including heat and electromagnetic field (EMF) sources. This policy provides guidance on recognizing potential hazards, understanding associated health risks, and taking appropriate precautions to avoid exposure. Ampirical Solutions employees are not responsible for controlling or managing non-ionizing radiation sources. However, employees are required to recognize hazards, follow all posted controls, and exercise stop-work authority when hazards are not clearly identified, communicated, or adequately controlled.

2 Scope

This policy applies to all Ampirical Solutions employees whose work activities may place them in the vicinity of non-ionizing radiation or heat-generating sources during field operations. These conditions may be encountered at client-owned or third-party facilities, including substations, transmission systems, communication sites, and other environments where energized equipment or RF-emitting devices are present. Ampirical Solutions does not own, operate, or maintain non-ionizing radiation-producing equipment. All hazard identification, exposure controls, and regulatory compliance requirements are the responsibility of the site owner or operator. When work is performed at client locations, the client's safety programs and procedures shall take precedence. This policy is intended to provide awareness-level guidance only and does not authorize employees to perform exposure monitoring, hazard evaluation, or control activities related to non-ionizing radiation.

3 Definitions

3.1 Non-Ionizing Radiation

- A form of energy that does not have sufficient energy to ionize atoms but can still cause biological effects, primarily through heating of body tissues. Common sources include radiofrequency (RF) radiation, microwave radiation, and electromagnetic fields (EMF) generated by energized electrical systems and communication equipment.

3.2 Electromagnetic Fields (EMF)

- Invisible areas of energy produced by electrically charged objects and are commonly present around powerlines, substations, and energized equipment.

3.3 Radiofrequency (RF) Radiation

- A type of non-ionizing radiation emitted by antennas, transmitters, and other communication devices and may result in localized or whole-body heating depending on exposure levels.

3.4 Thermal Hazards

- Heat stress conditions occur when the body is unable to adequately dissipate heat due to environmental conditions or proximity to heat-generating sources, which may lead to heat-related illnesses.

3.5 Controlled Area

- Any location where access is restricted due to the presence of non-ionizing radiation or heat hazards and where the site owner or operator has established protective measures.

3.6 Warning Signs

- Posted indicators used to identify the presence of radiation or heat hazards, including RF hazard signage in accordance with applicable OSHA standards.

4 Responsibilities

4.1 HSE Managers

- Ensure employees receive non-ionizing radiation awareness training.
- Communicate known or potential hazards prior to work activities.
- Verify that the site owner/operator establishes appropriate signage and controls.
- Support employee stop-work decisions when hazards are unclear or uncontrolled.

4.2 Employees

- Comply with all posted warning signs and client safety requirements.
- Maintain safe distances from known or suspected radiation and heat sources.
- Refrain from entering restricted or controlled areas without authorization.
- Immediately stop work and report unrecognized or uncontrolled hazards.

5 Awareness Level Requirements

5.1 Regulatory Requirements

- Non-ionizing radiation hazards are regulated under OSHA 29 CFR 1910.97, which establishes requirements for exposure limits, hazard identification, and warning signage.

5.2 OSHA Warning Sign Example

- Below is a compliant example from OSHA Figure G-11 of CFR 1910.97:



5.3 Regulatory Compliance Responsibilities

- These regulatory requirements are implemented and maintained by the equipment owner or site operator. Ampirical Solutions employees are not responsible for ensuring regulatory compliance but are required to recognize hazards and follow all established controls.

5.4 Common Sources of Non-Ionizing Radiation

- Employees may encounter non-ionizing radiation hazards in the presence of antennas, communication towers, energized substations, electrical equipment, and overhead powerlines. These sources may generate electromagnetic fields or heat that can pose risks when exposure is prolonged or when safe distances are not maintained. In many cases, these hazards are not detectable through human senses, which makes reliance on signage, barriers, and communication critical.

5.5 Health Effects and Exposure Risks

- The primary health concern associated with non-ionizing radiation is tissue heating. Overexposure to RF or EMF sources may result in localized heating effects. Additionally, high ambient temperatures or radiant heat from energized equipment may contribute to heat stress conditions, including heat exhaustion or heat stroke. Understanding these risks is essential for maintaining safe work practices.

5.6 Monitoring Equipment and Personal Protective Equipment

- Where required, appropriate non-ionizing radiation monitoring devices or personal protective equipment (PPE) will be provided by the host client or project owner. Ampirical employees will be trained in the proper use of such equipment when applicable and shall use it in accordance with site-specific requirements.

5.7 Exposure Monitoring

- Monitoring of non-ionizing radiation exposure levels is conducted by the host client or site owner as part of their regulatory compliance program. Ampirical relies on these monitoring controls and will follow all posted limits, signage, and site-specific requirements.

5.8 Hazard Control Measures

- Control measures for non-ionizing radiation hazards are typically implemented by the site owner or operator and may include engineering controls such as shielding or equipment design, administrative controls such as restricted access areas, and the use of warning signs or barricades.
- Employees are required to follow all such controls and must not bypass or ignore them under any circumstances.

5.9 Prohibited Activities

- Ampirical employees are strictly prohibited from entering controlled or restricted areas without authorization, approaching radiation or heat sources beyond established safe distances, or interacting with equipment that generates non-ionizing radiation. Employees are also prohibited from removing or disregarding warning signs, barricades, or other protective measures.

5.10 Stop Work Requirements

- Work must be immediately stopped if radiation or heat hazards are identified and are not clearly addressed within the scope of work. This includes situations where warning signage is present but not communicated during planning, where unknown or unverified sources are encountered, or where required controls such as signage or barricades are missing or appear inadequate. In such cases, employees are required to stop work, move to a safe location, if necessary, notify supervision and HSE, and await further instruction before resuming work.

5.11 Worksite Hazards

- When working on multi-employer worksites, employees may be exposed to hazards created by other contractors. If non-ionizing radiation or heat hazards are observed and appear to be uncontrolled, employees must leave the area and report on the condition. Ampirical Solutions will not allow employees to remain in environments where exposure risks are not properly managed.

5.12 Warning Signs and Hazard Identification

- The site owner or operator must clearly mark all non-ionizing radiation hazard areas. Employees must recognize and comply with all posted warning signs. If signage is missing, unclear, or inconsistent with site conditions, work shall not proceed until the condition has been evaluated and resolved.

6 Training

- Employees who may encounter non-ionizing radiation or heat hazards shall receive awareness-level training that includes:
 - Basic understanding of non-ionizing radiation (RF/EMF) and heat hazards.
 - Recognition of common hazard sources and warning signs.
 - Potential health effects associated with exposure.
 - OSHA regulatory overview (29 CFR 1910.97).
 - Employee responsibilities and stop-work authority.

7 References

OSHA 29 CFR 1910.97