1. PURPOSE

This document specifies requirements for steel erection in order to minimize hazards to people and property. This document highlights Contractor requirements and requirements of source documents referenced in section 5.1. Any applicable regulatory or Contractor requirements must be followed, with the most stringent requirement being met.

2. APPLICABILITY

This document applies to all subcontractors erecting structural steel at the INL as specified in their contract with Contractor. Subcontractors may impose stricter requirements on their employees or subtier contractors. The requirements of this document must be followed by subcontractors; however, the means of implementation may vary as determined by the subcontractor.

This document sets forth requirements to protect employees from the hazards associated with steel erection activities. Steel erection activities include hoisting, laying out, placing, connecting, welding, burning, guying, bracing, bolting, plumbing, and rigging structural steel, steel joists, and metal buildings; installing metal decking, curtain walls, window walls, siding systems, miscellaneous metals, ornamental iron, and similar materials; and moving point-to-point while performing these activities.

3. REQUIREMENTS

3.1 Steel erection shall meet the r requirements of 29 CFR 1926 Subpart R “Steel Erection.” Additional requirements specific to steel erection are specified below

3.2 Administrative Activities

3.2.1 The fall protection requirements of RD-2002, “Fall Protection,” shall apply for all work greater than 6 feet off the ground.

3.2.2 All levels of supervision shall understand their roles in implementing safety requirements for steel erection.

3.2.3 Qualified persons and competent persons shall be designated for steel erection work. Documentation of the designation of the qualified person and competent person shall be made available to the Contractor POC.

3.2.4 A Steel Erection Plan shall be prepared by a qualified person in accordance with Appendix A.

3.3 Hoisting and Rigging

3.3.1 General

3.3.1.1 A qualified rigger (a rigger who is also a qualified person) shall inspect the rigging prior to each shift in accordance with DOE Hoisting and Rigging Standard STD-1090, Chapter 15.

3.3.1.2 The headache ball, hook, or load shall not be used to transport personnel except as provided in requirement section 3.3.1.3.

3.3.1.3 Cranes or derricks may be used to hoist employees on a personnel platform when work under this subpart is being conducted, provided that all provisions of DOE Hoisting and Rigging Standard STD-1090, Chapter 4 “Lifting Personnel”, are met.

3.4 Fall Protection

3.4.1 General requirements

3.4.1.1 Employee engaged in a steel erection activity who is on a walking/working surface with an unprotected side or edge more than 6 ft above a lower level shall be protected from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, or fall restraint systems.

3.5 Training

3.5.1 Documentation of training shall be in accordance to RD-1008, Training and Indoctrination.

4. DEFINITIONS

For definitions of terms used throughout the INL Subcontractor Requirements manual, refer to LST-359.

5. REFERENCES

5.1 Source Documents

29 CFR 1926, Subpart M, Fall Protection 29 CFR 1926, Subpart R, Steel Erection

6. APPENDICES

Appendix A, Requirements for Establishing the Components of a Steel Erection Plan

Appendix A

Requirements for Establishing the Components of a Steel Erection Plan

1.0 General

1.1 This appendix shall be used in developing a Steel Erection Plan.

1.2 Pre-work conferences and site inspections shall be held between the erector and controlling subcontractor, Contractor construction management, project engineers, and fabricator, before the start of steel erection to both develop and review the steel erection plan which will meet the erection requirements of the manufacturer and this document.

2.0 Components of the Steel Erection Plan

Steel erection plans shall contain the following elements.

2.1 Plans shall contain a sequence of erection activity, developed in coordination with the controlling subcontractor, that reflects the following considerations:

A. structural steel design to include anchorage points for fall protection, as required in this procedure, during erection

B. material deliveries

C. material staging and storage

D. coordination with other trades and subcontractor activities.

E. bolting sequence required for structural steel errection.

2.2 Plans shall contain a description of the crane and derrick selection and placement procedures, including the following:

A. site preparation

B. path for overhead loads

C. critical lifts, including rigging supplies and equipment.

2.3 Plans shall contain a description of steel erection activities and procedures including the following:

A. stability considerations requiring temporary bracing and guying

B. erection bridging terminus point

C. anchor bolt notifications regarding repair, replacement and modifications

D. columns and beams (including joists and purlins)

E. connections

F. decking

G. ornamental and miscellaneous iron.

2.4 Plans shall contain a description of the Fall Hazard Prevention Analysis (FHPA) or the fall protection plan (with designed anchor points) and the equipment that will be used during steel erection to comply with this document.

2.5 The Steel Erection Plan shall use, where possible, methods of erection to minimize fall hazards. These methods may include pre-punching holes in steel for the fall protection system anchor points; erecting steel on the ground with static lines, then elevating it as a section; or using equipment such as aerial lifts, motorized elevating work platforms, or scaffolding as part of the fall protection system. Fall protection for this equipment must be provided as required by the manufacturer and applicable OSHA standards or RDs.

2.6 Plans shall contain a description of the procedures that will be used for falling object protection.

2.7 Plans shall contain a description of the special procedures required for hazardous non-routine tasks.

2.8 Plans shall contain the documentation method that will be used to verify that each employee has received training for performing steel erection operations, including the contents of the steel erection plan and this procedure.

2.9 Plans shall contain a list of qualified and competent persons.

2.10 Plans shall contain a description of the procedures that will be used in the event of rescue or emergency response.

2.11 Plans shall identify the site and project.

2.12 The plan shall be signed and dated by qualified persons responsible for its preparation and modification.