1.0 SCOPE

The scope of this project will be performed at FCI – Butner, Unicor 2 HWY 75, Butner, North Carolina 27509. The scope of work is primarily electrical.

2.0 PERFORMANCE REQUIREMENTS

The performance requirements of this project include: New utility service which includes a new pad-mounted transformer, and upgrades to the facility's electrical service and distribution equipment to accommodate the new and future Injection Molding Machines. All work will be performed inside the secure zone of the facility, except for the new utility service.

2.1 REQUIREMENTS

a. This statement of work provides an overview of the project and is not all encompassing for the project scope of work. The project scope of work shall include the statement of work, contract documents and specifications. The documents include the following:
    1) Drawings –
        i. G000 - Title Sheet & Overall Plan
        ii. E001 – Symbols and Abbreviations
        iii. E100 - Partial Site Plan
        iv. E101 – Floor Plan – Electrical
        v. E102 – Partial Floor Plan – Electrical
        vi. Electrical Feeder Diagrams
        vii. Panel Schedules
    2) General Conditions –
    3) Technical Specifications –
        i. 260050 – Basic Materials and Methods
        ii. 260519 – Low-Voltage Electrical Power Conductors and Cables
        iii. 260526 – Grounding and Bonding for Electrical Systems
        iv. 260529 – Hangers and Supports for Electrical Systems
        v. 260533 – Raceway and Boxes for Electrical Systems
        vi. 260544 – Sleeves and Sleeve Seals for Electrical Raceways and Cabling
        vii. 262416 – Panelboards
        viii. 262813 - Fuses

b. All work shall be performed at a minimum in accordance with the latest applicable edition adopted by the Authority having jurisdiction of the applicable standards and codes. Reference General Electrical Notes on Sheet E001.

c. Drawings are diagrammatical. All electrical equipment locations are approximately only. For all measurements use field surveys. Wiring and conduit systems are strictly diagrammatic and do not indicate every required fitting, elbow, transition, junction box or similar items that are required for a complete system.

d. A New Utility pad-mounted transformer to be furnished and installed by Duke Energy. All work associated with new utility service is required to be coordinated with Duke Energy. Reference Site Plan (Sheet E100) and Feeder Diagrams (Sheet E201).
    1) Contractor shall provide new concrete pad and required underground conduits in accordance with Duke Energy's standards. Refer to Sheets E100 and E201.
        i. Contractor shall contact Duke Energy's and obtain their Installation Standards and Requirements prior to commencement of work. All work shall be coordinated with Duke Energy.
        ii. Contractor shall obtain Duke Energy's list of approved vendors for the new utility transformer pre-cast concrete pad.
        iii. Contractor shall provide support and compaction of pad. Pad must support the transformer weight with backfill and compacted to 95% density as per ASTM D 698 to prevent uneven settling.
        iv. Pad shall be installed to ensure water drains away from the transformer.
        v. Trenches shall be backfilled to provide a stable and level base.

    2) Contractor shall provide transformer pad grounding. Refer to typical grounding detail on sheet E100.
        i. Contractor shall obtain Duke Energy's pad mounted transformer's grounding requirements and provide grounding in accordance with their requirements.

    3) The underground service will require the installation of an in-ground pull box, and extension of existing secondary feeders to new pad-mounted

transformer. Refer to Sheet E100 for approximate location and Sheet E201 for demolition and new work.

i. It is the Contractor's responsibility to field verify exact location of existing pad mounted transformer, existing feeder locations, new in-ground pull box, feeder extension to new pad-mounted transformer, etc.

4) The existing utility transformer pad and associated conduits not to be reused shall be removed. Contractor shall coordinate with Duke Energy for removal of transformer. Refer to Sheets E100 and E201 for demolition and new work.

e. Existing service entrance panelboard "EP2" shall be replaced with new. Existing panelboard shall be removed and new service entrance panelboard shall be installed. Refer to Sheet E101 for existing location and Sheet E201 for new location.

1) New Service Entrance Panelboard "EP2" - Refer to Sheet E202 and Specification Section 262416.

2) The installation of the new panelboard will require the connections of existing panelboards (existing feeders) and new panelboards (new feeders) to new service entrance panelboard.
   i. Refer to Feeder diagrams on sheet E201 for demolition and new work.
   ii. It is the Contractor's responsibility to field verify existing conditions and obtain approved routing of new feeders in the field with Owner's representative.
   iii. Field measurements are required for feeder lengths.

3) One existing panelboard "EP5" in shop area will require new feeders to be provided to new panelboard "EP2"
   i. Refer to Sheet E102 for location of panelboard and Sheet E201 Feeder diagram for demolition and new work.
   ii. It is the Contractor's responsibility to field verify existing conditions and obtain approved routing of new feeders in the field with Owner's representative.
   iii. Field measurements are required for feeder lengths.

f. Two new branch panelboards shall be provided. One panelboard "EP6" located in shop area and one panelboard "EP7" located in the electrical room. Refer to Sheet E102 for panelboard locations.

1) New Panelboard "EP7" - Refer to Sheet E202 and Specification Section 262416.

2) Panelboard "EP7" shall be connected to the existing 300 kva transformer located in the electrical room. This will require existing feeder connections to existing 300 kva transformer to be removed and new provided. New feeders for transformer include the primary and secondary sides of transformer. Refer to Feeder Diagrams on sheet E201 for demolition and new work.
    i. It is the Contractor's responsibility to open existing 300kva transformer to verify existing transformer bussing and determine what is required for new feeders.
    ii. It is the Contractor's responsibility to field verify existing conditions and obtain approved routing of new feeders in the field with Owner's representative.
    iii. Field measurements are required for feeder lengths.

3) Panelboard "EP7" – two existing panelboards located in shop area are to be connected to "EP7". Existing feeders are to be intercepted and extended to EP7. Refer to Feeder Diagrams on Sheet E201 for demolition and new work. Refer to Sheet E202 for feeder circuit breaker designations.

    i. It is the Contractor's responsibility to field verify existing conditions and obtain approved routing of new feeders in the field with Owner's representative.
    ii. Field measurements are required for feeder lengths.

4) New Panelboard "EP6" - Refer to Sheet E202 and Specification Section 262416.

5) Panelboard "EP6" shall be connected "EP7". A new feeder and connections are required. Refer to Feeder Diagram Sheet E201.

i. It is the Contractor's responsibility to field verify existing conditions and obtain approved routing of new feeders in the field with Owner's representative.
ii. Field measurements are required for feeder lengths.

6) An existing branch circuit located in shop area shall be intercepted and routed to new panelboard "EP6" located in shop area. Refer to Sheet E102.
    i. Field measurements are required for circuit lengths.

7) Two existing branch circuits routed to existing panelboard "EP4" in electrical room shall be intercepted and routed to new panelboard "EP5" located in electrical room. Refer to Sheet E102.
    i. Field measurements are required for circuit lengths.

g. The installation of new utility service and upgrade of interior electrical distribution equipment shall be carefully coordinated so that there is minimum interruption in power to the building. Any interruption of services to the building shall be coordinated and approved by facility's representative in advance.