



Building a Better World
for All of Us®

October 21, 2021

RE: Town of Munster
Municipal Center Arc Flash Analysis
SEH No. 162684 14.00

Dustin Anderson
Town Manager
Town of Munster
1005 Ridge Road
Munster, IN 46321

Dear Mr. Anderson:

As part of our work in designing the Generator Systems Upgrade for the Town Hall Complex, Short Elliott Hendrickson Inc. (SEH®) has identified a need for a short-circuit and arc flash analysis of the existing and proposed electrical equipment in the building. Arc flash is a phenomenon where a flashover of electric current leaves its intended path and travels through the air from one conductor to another, or to ground. The results are often violent and when a person is in close proximity to the arc flash, serious injury, and even death, can occur.

The study will provide an understanding of the hazards associated with electrical equipment including panelboards, switchboards, and transformers, and promote safety for maintenance staff working on and around energized electrical equipment. Information from the study will be used to create labels for each piece of electrical equipment indicating the specific, calculated arc flash hazard associated with that equipment. These labels will help personnel understand the appropriate levels of protective equipment needed during routine maintenance tasks. Performing this analysis will increase worker safety and comply with OSHA, NEC and NFPA requirements. Labels will meet the current requirements for NEC and NFPA 70E standards.

PROPOSED PROJECT

For this project, SEH proposes to use SKM PowerTools as the electrical modeling software to provide the computerized analysis of each building's electrical system. A report will be prepared for each building and labels provided detailing the incident energy at each piece of equipment requiring a label.

SKM PowerTool files for each site modeled will be retained by SEH for use in developing updated labels whenever changes are made to the electrical systems in the future (Note that the electrical models will be provided to the Town of Munster).

We propose to add this work as an Amendment to our Agreement dated August 16, 2021 for the Generator Systems Upgrade.

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 9200 Calumet Avenue, Suite N300, Munster, IN 46321-2885

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PROJECT SCOPE

Task 1.0 - Project initiation, site visit and data collection

Task 1.1 Project Initiation meeting

SEH will lead a project initiation online meeting via Teams. The purpose of this meeting will be to review the following:

1. Project objectives
2. Review project scope and schedule
3. Data gathering

Task 1.2 Data Collection:

1. Site data collection will begin after the backup generator upgrades project has been awarded and electrical equipment has been selected.
2. Most of the needed electrical data was acquired from the previous site visit by SEH.
3. A few miscellaneous electrical device data may be needed to be provided by onsite staff to complete the analysis.

Task 2.0 - Arc Flash Hazard Analysis

The following buildings are included in this Task:

1. Munster Town Hall.
2. Police Department
3. Fire Station

Task 2.1. Modelling

1. A model will be developed using SKM PowerTools software for each building.
2. Actual breaker, transformer, generator, and other electrical equipment nameplate data will be used to develop the models.
3. Conductor sizes and lengths will be determined using existing drawings and field verification where necessary.
4. SEH has obtained the needed utility fault current and X/R information from NIPSCO.
5. Run analysis on fault current and arc flash hazard studies.

Task 2.2 Final report and printed labels

1. Deliverables:
 - a. PDF of final report.
 - b. Arc Flash Hazard vinyl labels
 - 1) Either 4x6 or 3x5 vinyl arc flash labels for each piece of equipment that is part of the analysis of the modeled sites.
 - 2) SEH to affix labels to equipment during backup generator upgrades construction site visit
 - c. SKM Powertools files for each modeled location

PROJECT SCHEDULE

SEH is prepared to begin these efforts upon receipt of your written authorization. The project will be completed in conjunction with the backup generator upgrades project.

PROJECT FEE

Based on the scope of services described above, SEH proposes to complete the work for a lump sum fee of \$10,100 in accordance with the terms of the original Agreement.

SUMMARY

SEH believes that this is an important addition to the Generator Systems Upgrade project at the Town's Municipal Complex. With the addition of several new pieces of electrical equipment, an arc flash analysis will provide safety measures to maintenance personnel who will be working on this equipment in the future. Please feel free to contact me at 219.688.0497 with any questions.

Sincerely,

SHORT ELLIOTT HENDRICKSON INC.



Jill E. DiTommaso, PE
Project Engineer



Satya Tallamraju, PE
Client Services Manager

c: Stephen Gunty, Director of Public Works
Chris Spolnik, Superintendent of Operations

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Accepted by: Town of Munster, Indiana

Signature

Title

Printed Name

Dated