



**26 0573 – Arc Flash Hazard and Short Circuit Analysis**

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A. General:

1. On new building and major renovation projects the consultant shall perform an Arc Flash Incident Energy Analysis and Risk Assessment in accordance with NFPA 70E 2015 and a short circuit analysis and coordination study and equipment evaluation using SKM PTW software. 100% selective coordination is required on new construction. Series ratings are not acceptable for new construction. Specify equipment with sufficient AIC ratings. Include motor loads 50hp and greater and disconnect switches 200A and greater in the model. Build the model in a single line diagram with multiple scenarios as needed (i.e. Main-Tie-Main, loads on normal utility, loads on generator etc.) in the Scenario Manager in SKM. Do not split up the one line with links for printing on 11x17.
2. As much as practical, design the power distribution system to allow for no more than 8 cal/cm<sup>2</sup> of arc flash incident energy at the normal working distance for all buses. Minimize the amount of incident energy at pad mounted transformer(s) secondary sides. It will be important to specify and model the correct pad mounted transformer primary side fuses in order to accomplish this.
3. This analysis shall be performed by the Consultant during design to eliminate specifying under rated equipment and coordination issues. The Consultant shall not simply defer this requirement to the contractor during design nor for the “as-built” analysis. A basis of design method may be used by utilizing basis of design OCP's and conservatively short cable lengths. Available fault current at either the pad mounted transformer(s) primary or secondary will be provided to the consultant by BSU.
4. Specify that the contractor provide the Consultant with final OCP's devices and cable lengths to perform the final “as-built” study and require the contractor make changes to submitted devices as required at his cost if he elected to deviate from the basis of design manufacturer's equipment and devices used on the original design study.
5. Specify ARMS “maintenance mode” switches on the main breaker of all switchboards 1000A and larger and specify a barrier between the main breaker section and other sections of these switchboards such that arcing fault within the main breaker section will not subject other sections to the blast.
6. The consultant shall provide to the contractor trip settings for any and all adjustable trip circuit breakers and shall specify the exact fuse type required for any fusible switches. Breakers are typically shipped with all settings at minimum. It is important these settings be correct prior to occupancy to avoid nuisance trips and coordination issues and to ensure accuracy of the model and analyses. Specify the contractor make final settings in the field per the consultant's analysis. The consultant shall check that the settings are correct during final inspection and punchout.
7. The Consultant shall provide to BSU the final “as-built” model in SKM PTW project format including all associated files including libraries. Provide detailed summary reports including arc flash analysis and TCC curves and trip settings.
8. Utilizing the Consultant's final as-built model, short circuit analysis, coordination study and arc flash analysis the Owner will print the final as-built arc flash labels in BSU

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standard label format and apply them to the equipment.