**Risk Assessment Action 1 Worksheet: Critical Load Characterization**

Worksheet Last Updated By: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Worksheet Last Updated On: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Refer to the information collected on criticality weighting of functions in the Site-Level Planning module, energy and water system data, and requirements of critical loads in the Baseline Development module to help fill out the tables in this worksheet. Criticality weightings associated with each load are inherited from the critical function that the load serves. Refer back to the information collected in those modules to help the team review the below questions, which will help fill out this worksheet.

* What redundant systems exist to support a critical load in the event of loss of offsite energy/water?
* Does the redundant system that would support each critical load change for different outage duration periods?
* Is there a second redundant system to the first redundant system? Is the second redundant system independent of the first redundant system, or are there common dependencies between the two systems?
* Do second redundant systems have the same capabilities as the first redundant system? If not, how are they different?

In the Site-Level Planning module, each critical function was provided a weighting; in the Baseline Development module, each critical load was mapped to a critical function. In this exercise, the Critical Load Weighting Factor is inherited from the Critical Function Weighting Factor. For those working offline, the information in the tables below maps directly to **Tab 2** of the Technical Resilience Navigator (TRN) Risk Assessment Excel model. For those working online, the data will be entered directly into the online worksheet.

Tolerable Outage and Mission Duplication Capability

Document the site critical loads and weighting factors established during previous modules, as well as the tolerable outage duration and mission duplication capability:

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| **Tolerable Outage and Mission Duplication Capability** |
| **Critical Load** | **Critical Load Weighting Factor** | **Tolerable Outage Duration (TOD) of Critical Load**(hours) | **Mission Duplication Capability?**(Yes/No) |
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For those critical loads that had a mission duplication capability (answered “yes” to the fourth column in the above table), use the table below to describe the capability in more detail.

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| **Tolerable Outage and Mission Duplication Capability** |
| **Critical Load** | **How long does it take to initiate the mission duplication capability?**(hours) | **Is the time it takes for mission duplication within the tolerable outage duration?**(Yes/No) | **Has the site documented AND exercised the mission restoration capability?** (Yes/No) |
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## Components of Redundant Energy and Water to Address Outages of Different Durations

This table identifies the systems that qualify as redundant resources to each critical load. A qualifying redundant system must be capable of actuating within the critical load’s tolerable outage duration, and of providing backup throughout the outage duration (specified in each column). Note the duration for which the redundant system can operate in the tables below.

***Energy Systems—Electricity***

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| **Loss of Offsite Electric Power Outage Duration—First Redundant System** |
| **Critical Load** | Redundant System for Outage: **1 hour** | Redundant System for Outage: **1 day** | Redundant System for Outage: **1 week** | Redundant System for Outage: **1 month** | Redundant System for Outage: **6 months** |
| IT plug loads in Data Center X | Diesel generator | Diesel generator | Diesel generator only has 3 days of onsite fuel; not valid for entire outage duration | No onsite redundant capabilities |  |
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| **Loss of Offsite Electric Power Outage Duration—Second Redundant System** |
| **Critical Load** | *Redundant System for Outage:* ***1 hour*** | *Redundant System for Outage:* ***1 day*** | *Redundant System for Outage:* ***1 week*** | *Redundant System for Outage:* ***1 month*** | *Redundant System for Outage:* ***6 months*** |
| IT plug load in Data Center X | No secondary redundant systems |  |  |  |  |
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***Energy Systems—Natural Gas***

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| **Loss of Offsite Natural Gas Outage Duration—First Redundant System** |
| **Critical Load** | *Redundant System for Outage:* ***1 hour*** | *Redundant System for Outage:* ***1 day*** | *Redundant System for Outage:* ***1 week*** | *Redundant System for Outage:* ***1 month*** | *Redundant System for Outage:* ***6 months*** |
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| **Loss of Offsite Natural Gas Outage Duration—Second Redundant System** |
| **Critical Load** | *Redundant System for Outage:* ***1 hour*** | *Redundant System for Outage:* ***1 day*** | *Redundant System for Outage:* ***1 week*** | *Redundant System for Outage:* ***1 month*** | *Redundant System for Outage:* ***6 months*** |
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***Water Systems***

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| **Loss of Offsite Water Outage Duration—First Redundant System** |
| **Critical Load** | *Redundant System for Outage:* ***1 hour*** | *Redundant System for Outage:* ***1 day*** | *Redundant System for Outage:* ***1 week*** | *Redundant System for Outage:* ***1 month*** | *Redundant System for Outage:* ***6 months*** |
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| **Loss of Offsite Water Outage Duration—Second Redundant System** |
| **Critical Load** | *Redundant System for Outage:* ***1 hour*** | *Redundant System for Outage:* ***1 day*** | *Redundant System for Outage:* ***1 week*** | *Redundant System for Outage:* ***1 month*** | *Redundant System for Outage:* ***6 months*** |
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