Infinite Recharge Terminology

**Activated** -- During teleop, the state of a Shield Generator stage that has reached Capacity and, if required, has the corresponding Control Panel action successfully completed.

**Capacity** -- The number of Power Cells that must be scored to charge each stage.
- See above chart

**Droid** -- A Robot

**Energized** -- A Shield Generator is Energized once all three stages have been Activated. An Activated Shield Generator earns an alliance 1 Ranking Point.

**Hanging** -- A robot is Hanging if 5 seconds after the match, it is fully supported by its alliance Generator Switch. (i.e. The robot is attached to the Generator Switch and not touching the ground) Each Hanging robot earns 25 points for their alliance.

**Initiation Line** -- A white tape line located 10' from each player station. Robots must start with part of their bumpers breaking the plane of their Initiation Line which is located in their opponent’s Sector. Robots moving off the Initiation Line during the autonomous period earn 5 points for their alliance.

**Level** -- A Rung (and associated Generator Switch) is Level if is within 8 degrees of horizontal 5 seconds after a match, and all Robots contacting the Generator Switch are Hanging. A Level Generator Switch earns 15 points for the alliance.

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**Table 4-1: SHIELD GENERATOR ACTIVATION requirements**

<table>
<thead>
<tr>
<th>Stage</th>
<th>CAPACITY</th>
<th>ACTIVATED when...</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9</td>
<td>nine (9) POWER CELLS are scored &amp; TELEOP has begun</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>twenty (20) POWER CELLS are scored in Stage 2 &amp; ROTATION CONTROL is complete</td>
</tr>
<tr>
<td>3</td>
<td>20</td>
<td>twenty (20) POWER CELLS are scored in Stage 3 &amp; POSITION CONTROL is complete</td>
</tr>
</tbody>
</table>
**Loading Bay** -- The two alliance specific structures, located along the player station walls, where Human Players deliver *Power Cells* to the field via any of the five chutes. Each *Loading Bay* also includes racks where teams must store *Power Cells*.

**Loading Zone** -- One of two alliance specific, triangular volumes, located in front of each *Loading Bay*, marked by alliance colored tape. Alliance robots are protected from contact with opposing robots while in their *Loading Zone*.

**Operational** -- A *Shield Generator* is considered to be *Operational* when the alliance’s *Hanging* and *Level* points are greater than or equal to 65. An *Operational Shield Generator* earns an alliance 1 Ranking Point.

**Parked** -- A Robot is considered *Parked* at the end of the match if it is fully supported by the *Shield Generator*, not touching any carpet outside its alliance *Rendezvous Point*, and not *Hanging*. (i.e. The robot is in the *Rendezvous Point*) A *Parked* robot earns 5 points for their alliance.

**Power Cell** -- The 7” yellow foam ball used as a scoring object. There are 48 *Power Cells* in a match. Robots score *Power Cells* into *Power Ports*.

**Power Port** -- One of two sections of the field where robots score *Power Cells*. Each *Power Port* is located on the opposite alliance wall. (i.e. the red *Power Port* is on the blue alliance station wall). Each *Power Port* consists of the following:

- **Bottom Port** -- The large rectangular opening at the bottom of the *Power Port*. *Power Cells* scored in the *Bottom Port* earn 2 points in the autonomous period and 1 point in teleop.
- **Inner Port** -- The circular opening, concentric with and behind the *Outer Port*. *Power Cells* scored in the *Inner Port* earn 6 points in the autonomous period and 3 points in teleop.
- **Outer Port** -- The large hexagonal opening at the top of the *Power Port*. *Power Cells* scored in the *Outer Port* earn 4 points in the autonomous period and 2 points in teleop.
- **Corral** -- Balls scored in any of the *Power Ports* are released into the *Corral*.

**Sector** -- The volume of the field from the *Initiation Line* to the alliance station wall.

**Shield Generator** -- The *Shield Generator* is located in the center of the field and consists of the trusses, *Generator Switches*, the *Boundaries* and the floor protection. Teams score *Power Cells* and manipulate *Control Panels* to *Activate* and *Energize* the *Shield Generator*.

- **Boundaries** -- The 1” tall barriers that divide the *Shield Generator* into four rectangles. They also mark and define the two *Rendezvous Points*.
- **Generator Switch** -- One of two giant swings, one per alliance, which hang from the top of *Shield Generator*. Each *Generator Switch* has a *Rung*. 
• **Rendezvous Point** -- A rectangular volume marked by the alliance colored and black **Boundaries** on the field in **Shield Generator**. Alliance robots are protected from contact with opposing robots during the end game period, while in their **Rendezvous Point**.

• **Rung** -- The aluminum pipe along the bottom of each **Generator Switch**. Robots hang from the **Rung** to score points at the end of the match, while also trying to bring the **Rung** to a **Level** position for additional points.

**Target Zone** -- One of two alliance specific, triangular volumes, located in front of each **Power Port**, marked by alliance colored tape. Alliance robots are protected from contact with opposing robots while in their **Target Zone**.

**Trench Run** -- One of two alliance specific, rectangular volumes, located on each long side of the field, marked by alliance colored tape. A **Trench** and **Control Panel** are located in each **Trench Run**. Alliance robots are protected from contact with opposing robots while in their **Target Zone**.

• **Trench** -- A 28” high, 56” wide tunnel located in each **Trench Run**

• **Control Panel** -- Two alliance specific items, located on top of each **Trench**. The **Control Panel** is a 32” inch colored disc, with equally sized pie shaped segments that are red, yellow, blue, and green. **Control Panels** activate Stage 2 and 3 of the **Shield Generator** once each stage has reached **Capacity**. **Control Panel** states include:
  
  o **Position Control** -- **Position Control** occurs when a specified color wedge of the **Control Panel** aligns with the sensor for at least five seconds. Once either alliance reaches Stage 3 **Capacity**, the FMS will transmit a randomly selected color to each alliance, thereby telling the alliance which color they need to achieve **Position Control**.

  o **Rotation Control** -- **Rotation Control** occurs when the **Control Panel** is rotated between 3 and 5 times, once Stage 2 **Capacity** has been reached.