

2015 Accomplishments

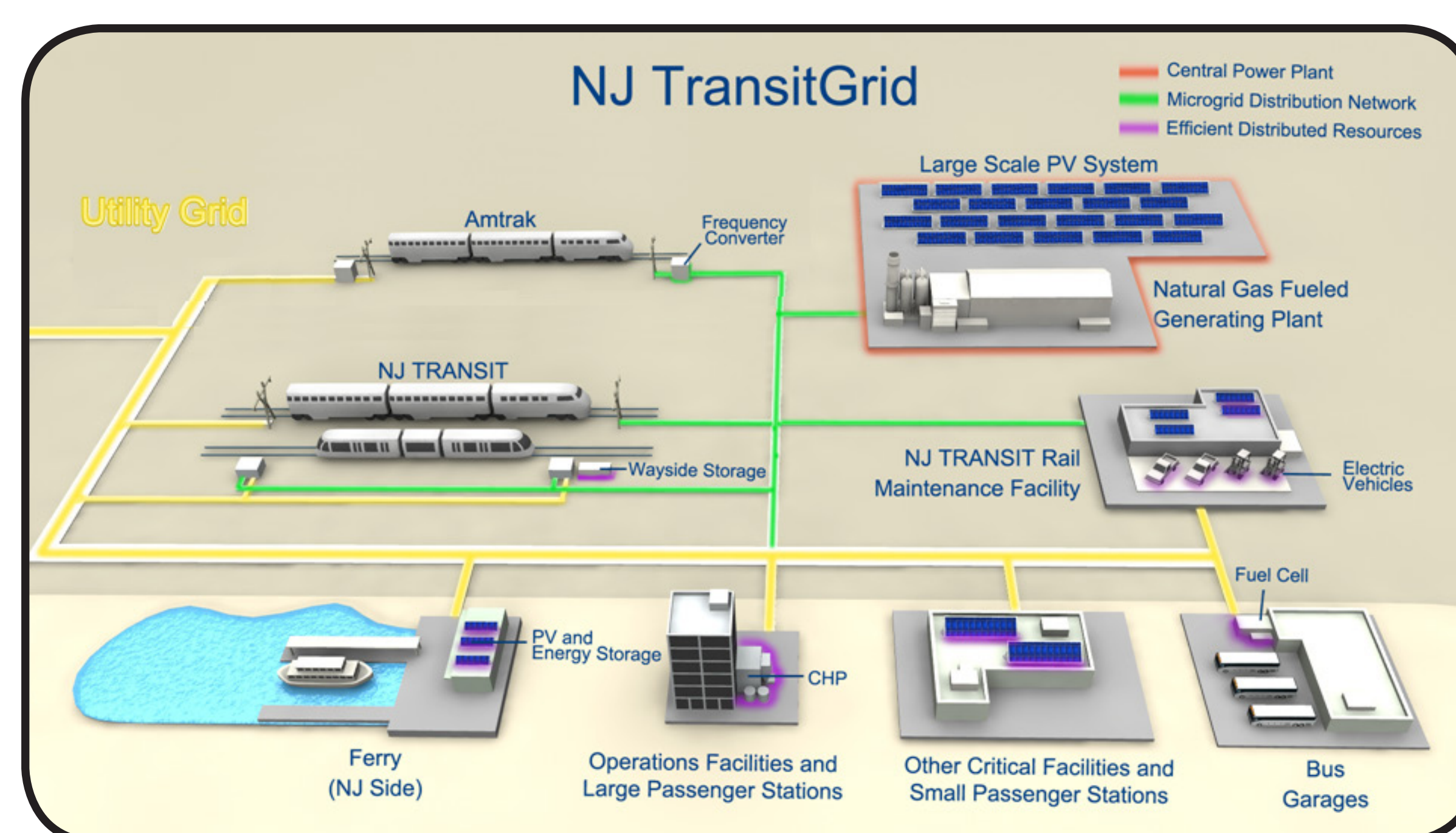
Division 6000 | Organization 6100

NJ TransitGrid

Sandia partnered with the New Jersey Transit Authority (NJ Transit) and Amtrak to develop a conceptual design for NJ TransitGrid, a resilient microgrid that maintains electric train service in a critical transportation corridor linking New York City and Newark. This resilient electric infrastructure is designed to minimize the impact of catastrophic events, such as the recent Super storm Sandy in 2012, which caused major grid outages and rail service disruption. Sandia performed this work under a Memorandum of Understanding signed by DOE, the New Jersey Transit Corporation, and the New Jersey Board of Public Utilities. Sandia's design was the basis for a Federal Transportation Administration grant to deploy the \$600 Million NJ TransitGrid project.

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This approximately 100MW microgrid will provide power to regional rail transportation around Newark, New Jersey, connecting into Manhattan during blackouts and other critical events. The project is also designed to ensure continued electricity to ferries, buses, and critical operations facilities.



DOE Secretary Moniz addresses those gathered to witness the NJ Transit FutureGrid MOU signing on August 26th.

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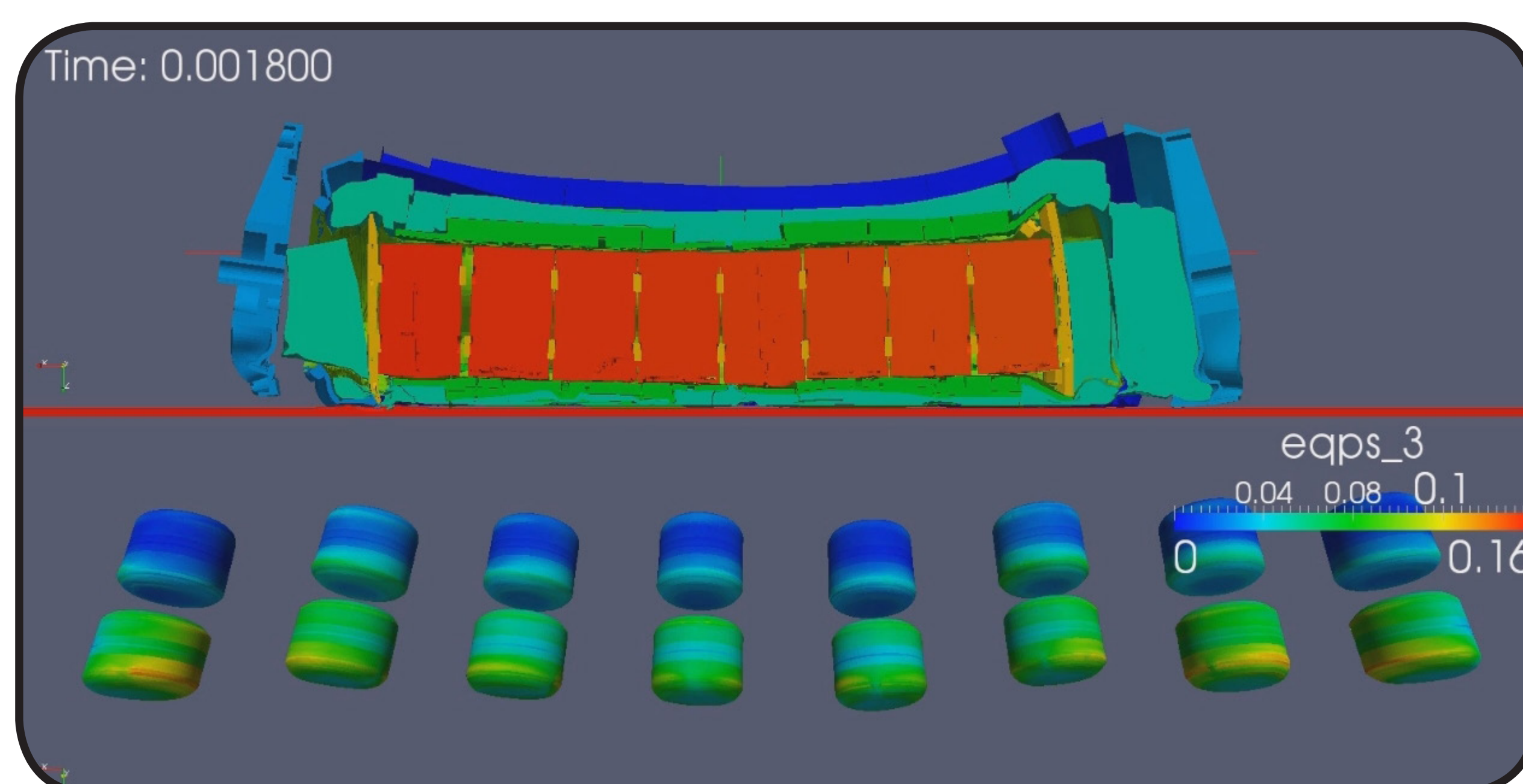
Division 6000 | Organizations 6200, 1500, 5400

The Radioisotope Power Systems Launch Safety Project

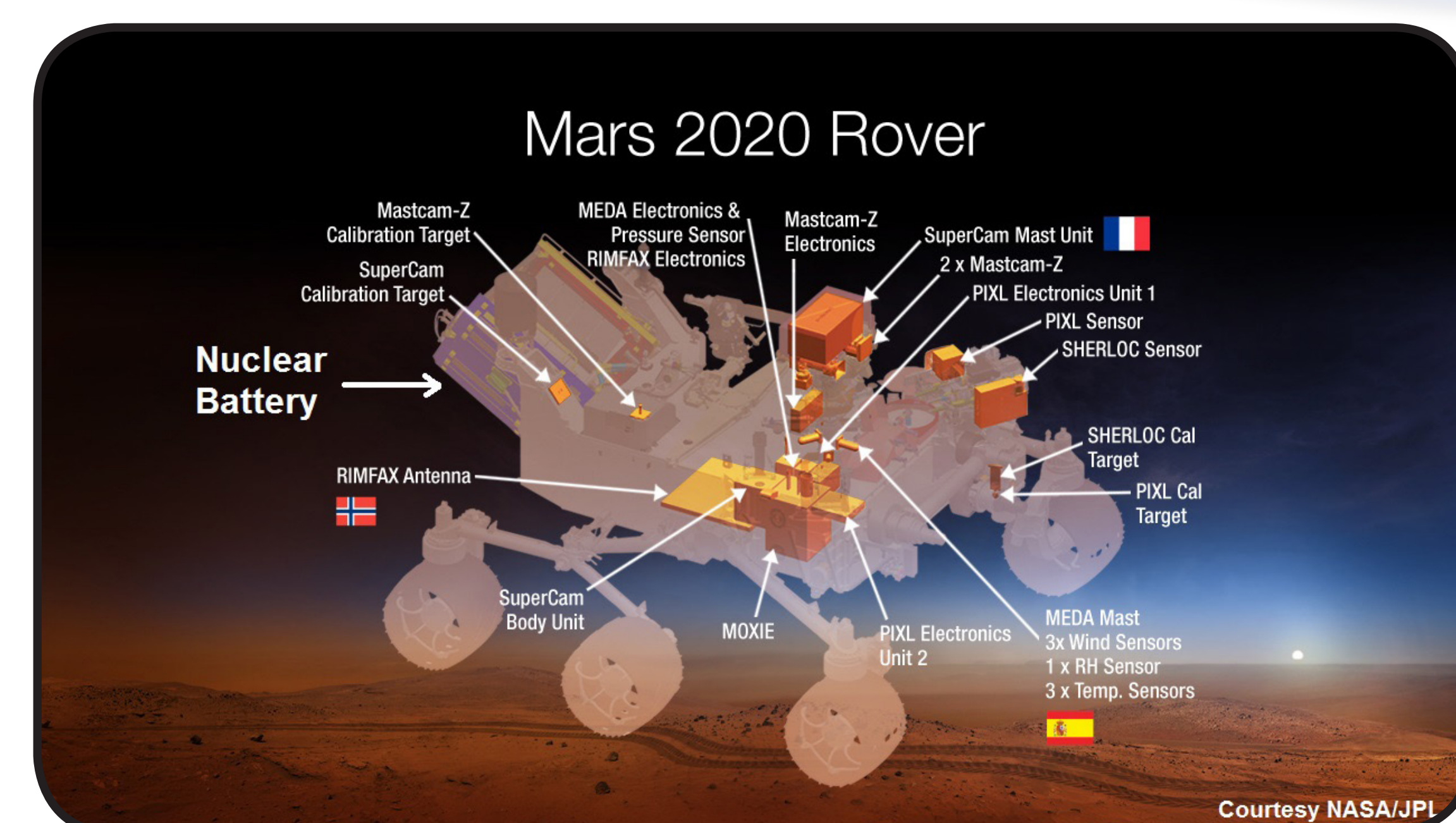
The Radioisotope Power Systems Launch Safety Project completed two major milestones in FY15. The first was the Nuclear Risk Assessment (NRA) for the launch of the next nuclear-powered rover to Mars in 2020. The NRA serves as the foundation of the Mars 2020 Environmental Impact Statement that NASA issued on November 6, 2014. Second, the Draft Safety Analysis Report for the Advanced Stirling Radioisotope Generator, a new nuclear battery design, was completed.

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Simulation of battery impact at nearly twice terminal velocity, with no release of nuclear material from fuel capsules.



Science instruments on the Mars 2020 Rover, all powered by a nuclear battery.

2015 Accomplishments

Division 6000 | Organizations 6200, 6500, 2500, 1500

Recovery of Waste Isolation Pilot Plant (WIPP)

Sandia has served as science adviser to DOE on matters pertaining to the Waste Isolation Pilot Plant (WIPP) for decades. This year, however, we were called to provide unique support. Two incidents in the WIPP underground occurred within nine days of each other: a fire and a radiation release. Sandia collaborated with Los Alamos National Laboratory to offer robotics expertise to facilitate the initial re-entry to the WIPP underground (although this assistance was ultimately deemed unnecessary). Afterwards, Sandia joined the WIPP Technical Assessment Team, a five-lab consortium chartered by the Secretary of Energy to investigate the causes of the radiation release and to assess the likely extent of condition.

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LANL and Sandia robots at the WIPP site for capability demonstrations.



TRU Waste Drum 68660, the drum in Room 7 of Panel 7 at WIPP known to have breached.