



Naval power systems technology development roadmap

What is the naval power & energy systems technology development roadmap?

The following is the Naval Power and Energy Systems Technology Development Roadmap, the Naval Sea Systems Command's strategy to meet future weapon and sensor systems power requirements. The document was released June 26. Today, the U.S. Navy is on the cusp of revolutionary changes in how warfare at sea is conducted.

What is the prime mover product area for naval power systems?

The prime mover product area for naval power systems focuses primarily on diesel engines and gas turbines. Energy recovery and fuel cells are also discussed. Steam turbine prime movers for naval nuclear propulsion applications are not within this roadmap's purview.

What are the long-term trends leading the development of naval power systems?

This TDR proposes multiple paths to continue providing targets in the face of uncertainty. Long term trends directly leading the development of Naval Power Systems are expected to continue. In general, they are: Navy platforms will require more electric power, on demand, to meet the needs of ever improving mission systems.

What drives naval power system electrical requirements?

Requirements drive development to meet future capabilities. Section II derived requirements analysis identifies two primary drivers of naval power system electrical requirements - the initial introduction of advanced loads such as weapons and sensors and reducing fuel consumption.

What is a naval power system?

A naval power system is subjected to a shock and vibration environment that ranges from calm peacetime transits to battle damage conditions. System redundancy combined with physical separation of components and multiple system distribution paths are inherently required to continue ship operation with flooding, fire, and/or battle damage.

How will naval power conversion technology influence the selection of interfaces?

However, the concepts and underlying technologies, such as advance power electronic devices, transformers, converter topologies and control philosophies, and passive filtering improvements developed by industry will provide the basis for naval power conversion equipment and should influence the direction the Navy goes in selection of interfaces.

Naval Power and Energy Systems Technology Development Roadmap. Distribution Statement A: Approved for Public Release: Distribution is unlimited. I 4 MORE POWER DIFFERENT DEMAND Power Generation Power Requirement Power Today ... o Future Naval Power Systems and ...



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Naval Power & Energy Systems (NPES) Technology Development Roadmap (TDR): - ESO developments are aligned with the Navy's 30 year shipbuilding plan via the Naval Power and Energy Systems Technology Development Roadmap, which outlines the way ahead for future developments and provides a basis for coordinated planning and investment by the Navy and ...

It is a fast moving arena; even within the two years between the release of the 2013 Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) and its most recent biennial update in 2015, there have been a number of significant developments. ... "The future is bright for naval integrated power and energy systems," Markle says ...

Naval Sea Systems Command (NAVSEA) released the Naval Power and Energy Systems Technology Development Roadmap (NPES-TDR) providing an evolutionary strategy to meet future weapon and sensor systems ...

This is a 95 page document. Naval Power Systems Technology Development Roadmap PMS 320 by the Electric Ships Office that is directing the Future of Ships Power. Advanced sensors, railguns and lasers will need a lot more power but that power will need to be compact and light. The Navy has just installed a first prototype railgun on a navy ...

Subsea & Seabed Power - The Naval needs in the undersea domain are growing and the means for powering platforms, sensors, and systems by understanding and utilizing the physics of the seabed and water column is ongoing and the interests are expanding. Several seabed energy conversion efforts are underway, and more attention is needed to areas that are unexplored to ...

In the Navy's 2019-2037 technology development roadmap for naval power and energy systems (NPES), it calls naval electrification "a critical part of the kill chain" based on its electrification needs for high-power radars and networks, directed-energy weapons for counter-unmanned systems and missiles, and prime mover propulsion for silent ...

Naval Sea Systems Command (NAVSEA) released the Naval Power and Energy Systems Technology Development Roadmap (NPES-TDR) providing an evolutionary strategy to meet future weapon and sensor systems power requirements, June 26.

The roadmap, referred to as the Naval Power and Energy Systems Technology Development Roadmap, aligned warfighter requirements with the creation of energy and electrical power systems to help ...

The Navy recently produced a Next Generation Integrated Power System (NGIPS) Technology Development Roadmap that establishes the Navy's goal of incorporating a Medium Voltage DC (MVDC) Integrated ...

The Navy is looking at a variety of new propulsion systems -- from gas turbines to electric engines -- that will

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get surface ships where they need to go, and give them the energy they need to power new weapon systems. Naval ...

Naval power and energy systems are described in detail in the 2019 Naval Power and Energy Systems Technology Development Roadmap (NPES TDR). The NPES TDR focuses and aligns the power system investments for the Navy, Defense Department, industry and academia to guide future research and development investments to enable the Navy to ...

Download scientific diagram | Integrated Power and Energy System IPES is described in the 2015 U.S. Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) as "an advanced power ...

WASHINGTON - Naval Sea Systems Command (NAVSEA) released the Naval Power and Energy Systems Technology Development Roadmap, providing an evolutionary strategy to meet future weapon and sensor systems power requirements, June 26, the command said in a release of the same date.. Developed by the Electric Ships Office within Program ...

Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) is intended to guide the development of integrated power and energy systems to meet the need of the legacy fleet, ships currently in build, and the US Navy's Future Surface Combatant Force. Written by the Electric Ships Office (PMS 320) within Program Executive Office

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On 6/18/24 Naval Sea Systems Command issued Sources Sought N00024-24-I-4144 for Naval Power & Energy Systems Technology Development Roadmap (NPES TDR) Update due 10/10/24. The opportunity was issued full & open with NAICS 335311 and PSC 1905.

Common to all of the Power Generation architectures, the NGIPS Technology Development Roadmap projects the current IFTP zonal electrical distribution system will evolve to improve affordability while meeting survivability and quality of service (QOS) requirements (NAVSEA 2007). Figure 1: NGIPS Technology Development Roadmap (NAVSEA 2007)

Released in late June, the 2019 Naval Power and Energy Systems Technology Development Roadmap (NPES TDR) is intended to guide the development of integrated power and energy systems to meet the need of the legacy fleet, ships currently in build, and the US Navy's Future Surface Combatant Force.

In June 2020 NAVSEA published a Naval Power and Energy Systems Technology Development Roadmap that proposed strategies for expanding ship power capacity to support the power-hungry SPY-6(v) radar ...

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Developed by the Electric Ships Office within Program Executive Office (PEO) Ships, the roadmap aligns electric power and energy system development with increasing warfighter power needs, ...

The need for integrated power systems will increase in the coming decades with the increased projected propulsion and ship service power demands for future combatants with advanced sensors and ...

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