Hyperion Power™
New Clear Energy™

Los Alamos, New Mexico • Denver, Colorado
Washington, DC • London, England

A New Paradigm for Power Generation

A Key Element of Our Future Energy Mix

In order to meet the planet's ever expanding need for affordable energy, a number of different types of clean, emission-free technologies must be developed and employed. Nuclear power, with its ability to provide robust, continuous and reliable energy – regardless of weather conditions – must be part of this diverse mix. However, conventional large nuclear power plants, due to construction expense and the time required to build them, must be augmented with a smaller solution.

Small & Modular nuclear power Reactors (SMRs)

That "smaller solution" is the category of power reactors known as Small & Modular nuclear power Reactors (SMRs). The history of SMRs is about as long as the commercial use of large nuclear power plants. The fuels and technology included in today's SMR designs have been studied for 50 or more years, and some units went online decades ago. Like the design offered by Hyperion Power, SMRs provide the benefits of larger nuclear power plants – clean, continuous, reliable energy with no greenhouse gas emissions – yet they require very little space in which to operate. They can be dispatched to sites and engaged without the transportation and construction costs of big nuclear power plants. Sealed and self-contained, they offer a safe energy solution for areas of the globe where nuclear proliferation is a concern. But unlike any other clean energy generation, SMRs operate when the wind doesn't blow and the sun doesn't shine.

The Hyperion Power Module (HPM)

The Hyperion Power Module (HPM) is the frontrunner in the SMR industry. The HPM is one of the smallest, safest, and simplest designs. A self-contained, transportable, nuclear power reactor from Hyperion Power, the HPM originated from a design created by Dr. Otis Peterson during his tenure at Los Alamos National Laboratory (LANL). That work at the famed U.S. government laboratory continues today under a special commercial development agreement. Some of the world's foremost nuclear experts are driving to complete the initial "launch" design of the HPM and subsequent versions for the future. Their goal? Deploy and site a full capacity working HPM with 70 megawatts of thermal energy in 2013.

Hyperion Power is deeply concerned about the state of the environment, needless human suffering, and the search for energy independence —vital not just to the U.S., but to every nation on the planet. Hyperion Power believes that these concerns can be met through the safe deployment of SMRs and so is dedicated to realizing the full potential of this small but mighty power module – the HPM. Clean, safe, affordable energy should be available to everyone – even in the most remote locations.

Hyperion Power Module Product Characteristics

1. Transportable
   - Unit will measure approximately 1.5 m wide x 2.5 m tall
   - Fits into a standard fuel transport container
   - Transported via ship, rail, or truck
   - Modular design for easy and safe transport
2. Sealed Core – Safe and Secure
   - Factory sealed; no in-field refueling, closed fuel cycle
   - Returned to the factory for fuel and waste disposition
3. Safety
   - System will handle any accident through a combination of inherent and engineered features
   - Inherent negative feedback keeps the reactor stable and operating at a constant temperature
   - Sited underground, out of sight
   - Proliferation-resistant; never opened once installed
4. Operational Simplicity
   - Operation limited to reactivity adjustments to maintain constant temperature output
   - Produces power for 7 to 10 years depending on use
5. Minimal In-Core Mechanical Components
   - Operational reliability is greatly enhanced by the reduction of moving mechanical parts
6. Isolated Power Production
   - Electric generation components requiring maintenance are completely separated from the reactor
   - Allows existing generation facilities to be retrofitted

The Hyperion Power Module will be licensed by national and international regulatory authorities.

Industry & Community Benefits

The Hyperion Power Module (HPM) offers a perfect "distributed" independent energy solution for remote locations that are too difficult or expensive to reach with traditional electrical grid systems from one large, centrally-located, power plant. The HPM was originally designed to supply less-expensive, climate-friendly, emission-free power for oil sands and oil shale recovery operations. However, it soon became apparent that an equally important application for the HPM is as an energy source for clean electricity to communities that either do not have power, or are paying extreme prices for fossil fuel power.

A small power plant utilizing only one HPM can supply enough power for:

- 20,000+ American-style homes, or a …
- Large hospital complex
- Entire government center
- Series of irrigation systems
- Water treatment & distribution site
- Waste – sewage facility
- Heavy oil recovery
- Refugee community
- Emergency – disaster response center
- Military installation
- University or college
- Mining or drilling operation
- Industrial center or factory
- Corporate data centers
- And more …

HPMs can also be "teamed" in groups of two or more to provide even more power. By teaming multiple units, a medium to large-size power plant can be constructed years faster than a plant constructed on site the traditional way.

Why Support Small Modular Reactors (SMRs)?

Nuclear power is the one emission-free technology that can most quickly and efficiently replace the use of fossil fuels to generate electricity. Wind and solar only offer a third of their potential capacity for producing electricity – when the wind doesn't blow and the sun doesn't shine, these "renewables" must have back-up power from nuclear, coal, or gas. Nuclear is the only currently viable way to generate "green" baseload power.

Unfortunately, large nuclear power stations are nearly prohibitively expensive, difficult to fund, and take upwards of a decade or more to construct.

- SMRs cost a fraction of conventional large power reactors, as the same SMR design will be manufactured repetitively. As an example, the Hyperion Power Module (HPM) is only $50 million per unit.
- SMRs are "off the shelf" available and delivered to any approved site within months instead of the 10+ years required to construct a large reactor.

Large nuclear power stations can only be sited in particular locations and require large amounts of water and land.

- SMRs can be located on much smaller pieces of land and some, such as the HPM, do not require water for cooling the reactor.
- SMRs are proliferation-resistant due to the small amount of below weapons-grade fuel utilized, the permanently sealed nature of the unit and the multiple integral security measures.
- SMRs meet the Global Nuclear Energy Partnership (GNEP) standards by providing a manner in which foreign nations and entities can enjoy the benefits of nuclear power without having the ability to use the technology for nefarious purposes.

National electric grid systems are vulnerable to attack by terrorists, acts of nature, and age/maintenance.

- SMRs make it possible to create small independent grids that can be connected to, yet also independent of, larger electric grids. This will break up the monopoly and vulnerability of the large grid system as it now exists.

However, SMRs provide the same clean energy emission-free benefits of the traditional large nuclear power reactors now in operation. They also can provide the same robust, baseload power provided by the conventional large nuclear power reactors.