

**Energy
Secretary
Rick Perry
States His
Very Strong
Support For
Clean Nuclear
Power & For
Eliminating
Obsolete NRC
Regulations**



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Energy Security Action Committee Presentation

NEW Common Sense Plan For Yucca Mountain Lab Area



Ignore Yucca Mountain Opportunities?



Open A Carbon-Free Energy Center?

Which Do You Prefer?

Waste \$100+ Billion On Million-Year Yucca Mountain “Nuclear Dump”?

Or

Wisely Invest \$500+ Million In Nevada & Restore U.S. Nuclear Energy Leadership?

Introduction

40-Year-Old, Million-Year, Nuclear Spent Rod Repository Plan For The DOE Yucca Mountain Lab



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Overview

- **Nevadans CAN (Citizen Action Network)** proposes a “common sense” **alternative** to the 40-year-old policy that directs **permanent** (million-year) storage of “spent” nuclear fuel still containing **95% Uranium** & other minerals after spending an additional \$100+ Billion in taxes
- Our alternative includes **(1)** saving \$100 Billion by **opening** a **\$500+ Million, nuclear recycling plant** near YM on the Nevada National Security Site (**NNSS**), & **(2)** establishing a Joint, **Carbon-Free (C-F) Energy Engineering & Test Center** to **regain** U.S. nuclear power **leadership**
 - ✓ **Special nuclear fuels** would be created & sold to **current & advanced** nuclear plants
 - ✓ Some of \$40 Bil. spent fuel **storage & transport funds** would be used to **jump start** a **NNSS Carbon-Free (C-F) Energy Lab & Joint Engineering Center** to design, test & evaluate **Advanced Reactor-Powered MicroGrids** for **civilian & national security** requirements
 - ✓ Other C-F Energy systems (**solar, wind, etc.**) could be components of C-F MicroGrids
- A **nuclear recycling plant** as the **leading component** implemented in a NV **C-F Energy Center** could create boom times greater than seen in Silicon Valley and historic gold & silver rushes

**Quote by Argonne
Lab Scientists:**

**“If Spent Nuclear
Fuel Is Recycled,
Current
Inventories
Could Be Used In
Advanced
Reactors To
Power All U.S.
Electricity Needs
For Thousands of
Years!”**



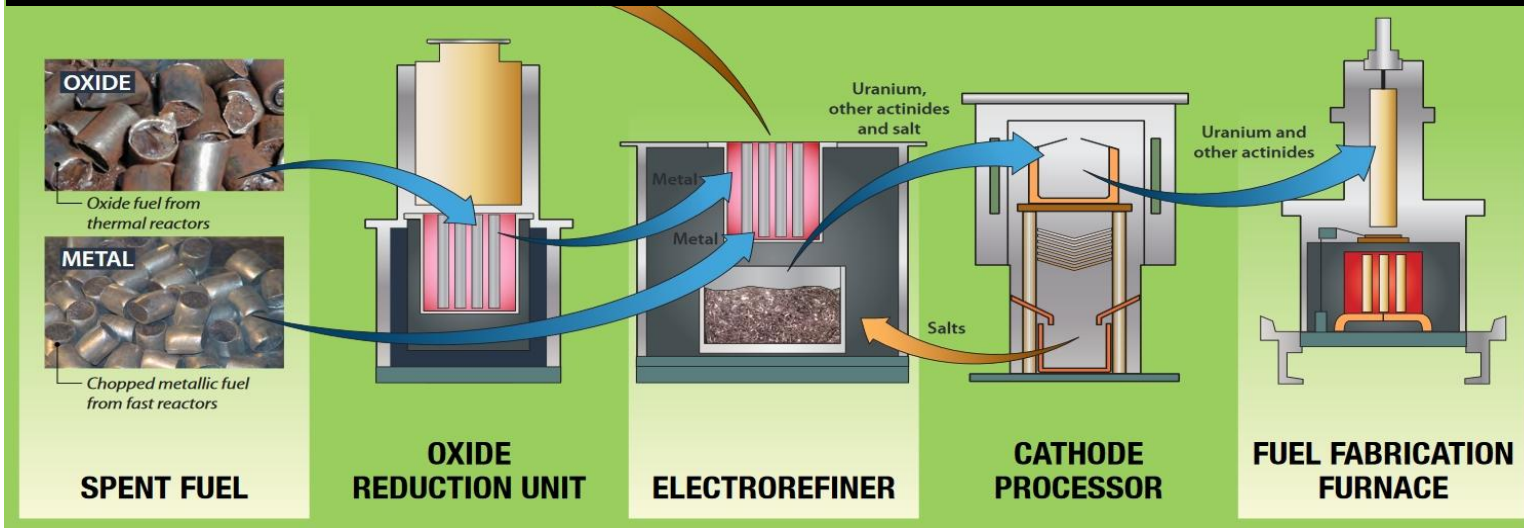
NUCLEAR RECYCLING: HOW IT WORKS



Click Below Image
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Argonne Lab Pyroprocessing System Is Recommended For NNS

DOE Developed: Could Save Over \$100 Billion If Used In Nevada!



Model Plant By Argonne Lab

Only \$500+ Million For Initial National Recycling Plant

Recycling Is The Reasonable & Affordable Yucca Mountain Option

Safe, Practical & Widely Used:

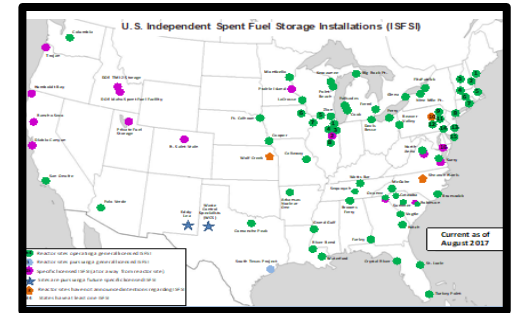
- Many nuclear nations already recycle
- Multiple recycling methods available
- DOE/Argonne Lab **Pyroprocessing** is U.S. owned & needs to be used at NNSS
- NNSS could also safely control, recycle & use surplus Plutonium in its reactor fuels
- The **NV National Security Site** is already being used for nuclear security, holding radio-active items, handling of nuclear fuels & testing of **advanced** reactors

Major Economic Benefits:

- Spur **massive NV economic expansions**
- Convert obsolete, Million-Year storage YM Plan to recycling & stop the political delays
- Add U.S. **Carbon-Free Energy Engineering Lab & Joint C-F Energy Park** to NNSS mission
- Implement key **security & safety** updates for **34+** sites at least cost to states & nation
- Add billions to 34+ states savings
- End **wasteful fighting between NV & Feds**

Restoring Nuclear Energy Leadership Via Nevada

- **New Recycling Plan**: Could create **tens of billions** of **state income** & **citizen payments**—similar to Alaskan pipeline deals.
- **Need to Negotiate**: Demanding to eliminate YM law without requiring a recycling center would be a disaster for Nevada's future economy
- **Permanent Dump Plan Is Lose-Lose**: It **blocks** economic development while recycling **creates** massive economic options for all Nevadans
- **Solves National Security Issues At Plants**: When temporary holding site & recycling plant are **ready**, move eligible shipping casks to **NNSS**
- **Pyroprocessing**: To support national security & non-proliferation goals, Argonne Lab's recycling system needs to be **NNSS** implemented
- **Engineer, Test & Evaluate Advanced Reactor Systems**: Establish a **Carbon-Free Energy Systems Center** specializing in **Advanced Reactor-powered MicroGrid Systems** designed to consume **90+%** of fuel with up to **30-year** refueling intervals instead of old reactors using less than **4%** of Uranium in fuel rods & requiring refueling in 4 years or less



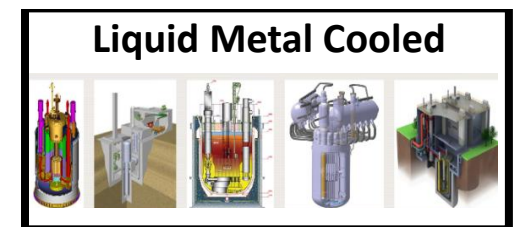
Spent Fuel Rod Sites



Temp. Storage Casks



Recycling Plant Model



Advanced Reactors

Nuclear Reactor Advances May Be Ahead Of Other Clean Energy Systems

Electronics:

Then

Now

Clean Energy:

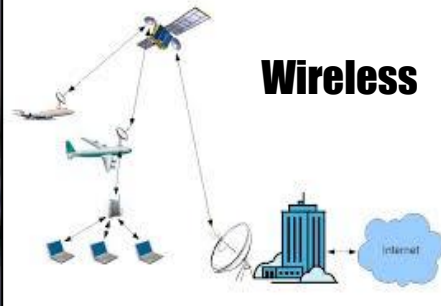
Then

Now

Phones



Networks



**Dragsters
Fuel Vs.
Electric**



**Nuclear
Power**



**Solar
Power**



**Wind
Power**



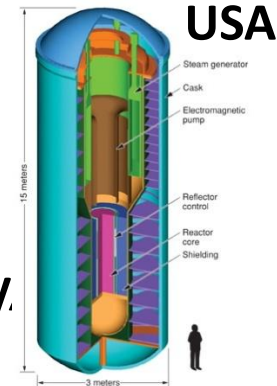
But, U.S. Lags Behind In Nuclear Power Implementations

Small **Modular** Reactors (**SMRs**) Are 21st Century Global FUTURE!

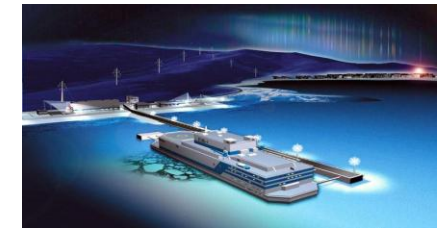
- Problem: **Suffocating** U.S. regulations must be greatly reduced
- Global Needs: **Fixed & mobile** SMR-powered MicroGrid systems
- U.S. Systems Features: **Carbon-Free, Underground, Sealed, 100% Safe, Tamper-Evident, EMP & Cyber Shielded, 24/7/365 available**
- Turn-key, leased systems to provide tamper-proof system reliability, minimize operating costs & offer open, competitive customer rates
- Nuclear “Battery”? Up to **30 years** before refueling/replacement
- Mass **Production-Line** Manufactured In “Standard” Sizes
 1. Farms/Villages: **5-10 MWe** for dozens of facilities
 2. Cities: **1,500 MWe** for cities of about **1,000,000**
 3. Fixed & Mobile National Security: From **4-100 MWe**
 4. Large Populations & Plants: Clusters of **400 MWe** units

But, what if U.S. becomes **dependent** on hostile nation products in this race for **global power dominance**?

NV & NNSS need to lead in this **key energy segment!**



USA

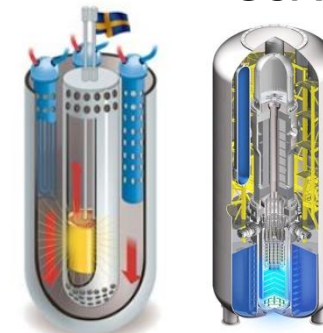


Russia



UK

Sweden USA



China

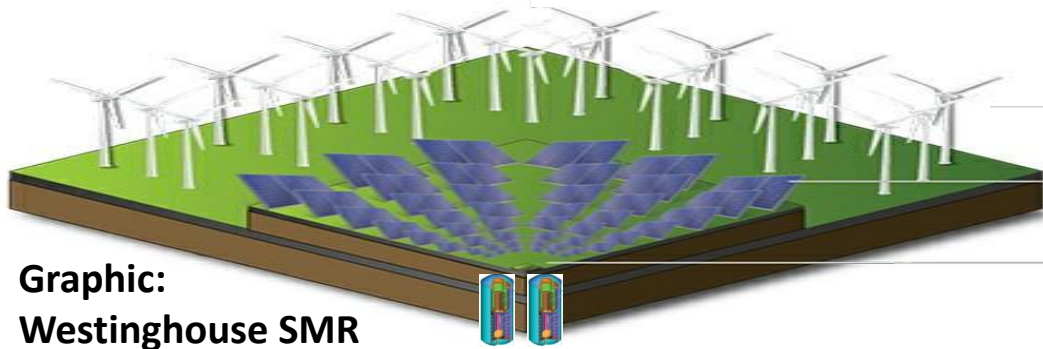


Japan-USA



Energy Security Action Committee Analysis:

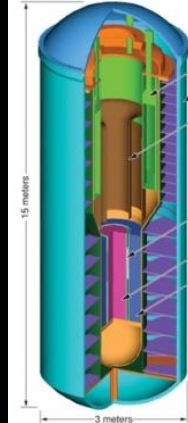
Among *Carbon-Free* Solar, Wind & Advanced Reactor Power Systems Which Is The Most **Earth-Friendly, Available, Affordable & Reliable?**



Graphic:
Westinghouse SMR

- Average **Wind** Power
225 MWe on **60,000** acres
- Average **Solar** Power
225 MWe on **2,400** acres
- Small Modular **Reactors**
225 MWe on **15** acres

Which Do You Prefer?



U.S./DOE SSTAR

Lead-Cooled,
Mobile &
Fixed Sites
(10-200 MWe)

Always **Up, Sealed,**
Underground, 30-yr.
Fueled, Liquid-Lead
Cooled, Walk-Away
Safe, EMP Protected

Decentralized Power Generation:

	Solar	Wind	SMR
- Acres Required For 225 MWe Power	2,400	60,000	15
- Heat/Cool Buildings, Make Hydrogen, Purify Water	No	No	Yes
- Kill Wildlife (Birds, Animals, Insects, Plants, etc.)	Millions	Millions	0
- Damage From Natural Disasters	Heavy	Heavy	None
- Vulnerabilities To Terrorism, EMP & Cyber Attacks	Huge	Huge	Minor
- Life Cycle of Units (years)	10-15	7-10	Up to 30
- Primary Manufacturing Source	China	China	USA
- Availability (Ave. Hours Per Day/Days Per Year)	0-12/100	0-24/180	24/365
- Est. Price of Power (Cents per KWh)	>15	>15	<07

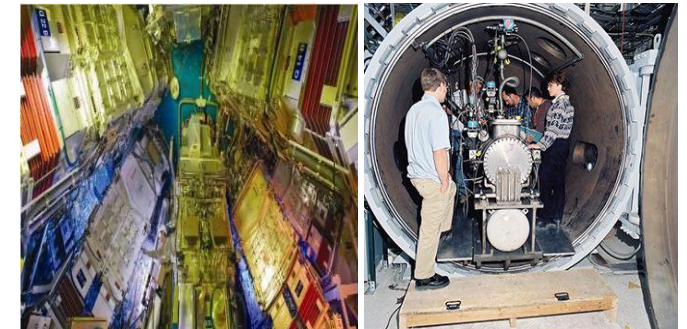
We Urgently Need NNSS As Carbon-Free Energy Engineering Center

- NNSS **uniquely** experienced in high-tech energy, radiation, **nuclear devices**, environment & **systems integration laboratory**
- **NV Nuclear Security Site (NNSS)** is a **Historic** Reservation with such as Atomic Testing, Yucca Mountain & Area 51 Sites
- NNSS is a natural, **remote** DOE place to recycle used fuel rods & develop **back up** & **mobile** power support for **Grid** & **RPS** markets
- Nearby **Hawthorne Army Depot** is the ideal place for a National Center for **Grid Spares Backup & Power Disaster Restorations** to support Grid security, modernization & rapid repairs
- Need for R&D & testing of **fixed** & **mobile** SMR systems for secure & **hardened** MicroGrids with **EMP**, **cyber** & **terrorist protections**

Space Reactor Testing At NNSS



Other NNSS High-Tech Projects



More On Recycling & Carbon-Free Energy Center Economics

For Citizens:

1. Save **\$Billions** for U.S. tax payers
2. An unmatched, 10-year economic concept
3. A **combination** of new high-tech recycling plant & **National Carbon-Free Energy Center** could create **tens of thousands of NV high salaried jobs** in about a decade
4. Carbon-Free Energy Centers could turn NV into a **“Silicon Valley”** of the **2030’s**
5. Recycling & Park profits could annually **pay NV citizens thousands** in future decades

For States & Nation:

1. Solves “nuclear spent rods” **backlog** issue
2. Solves long-term **health & tourism** worries
3. Solves national & state **security** issues
4. Saves governments & tax payers **\$Billions** & no other plan is more cost-effective
5. Creates clear path for establishing **U.S. leadership** in **advanced** nuclear technology
6. Avoids **political blocking** & establishes a **viable pathway** for **legislative cooperation**
7. Creates **huge** state & federal tax & fee **revenues** **not attainable** from other sources



Delaying Recycling Decision Is Hugely Wasteful

- Fact: Nuclear recycling is **safe & vastly less expensive** than storage, & a **Carbon-Free Energy Lab/Tech Center/Park** offers **unique options** for U.S. **economic developments**
- Fact: NV should **negotiate** a combined NNSS recycling plant & U.S. Carbon-Free Energy Lab & Engineering Center deal now. There is still time for 2018/2019
- Fact: **Outdated** nuclear regulations need to be **upgraded now** for advanced reactor types or miss chances for future global nuclear power market restoration
- Fact: **YM 5-yr. legislation** needs to be **amended now** to include **funding** for a NNSS Recycling Plant & NNSS Carbon-Free Energy Lab & Manufacturing Center



Questions -- Comments?



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Open A Carbon-Free Energy Center?

NOW Which Do You Prefer?

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Or

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