US NUCLEAR ENERGY FOUNDATION

"Evangelizing Nuclear Advocacy by Bringing Science to Citizens"

A Non-Profit 501 (C)(3) Nevada Foundation
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09/14/16 **Op-Ed**

Is it time for a U.S. "National Above Ground Nuclear Waste Storage Facility"?

The US Nuclear Energy Foundation has submitted a recommendation to the Nuclear Waste Technical Review Board (NWTRB) to consider the establishment of a National Above-Ground Temporary Nuclear Waste Storage Facility for America's Spent Nuclear Fuel (SNF). USNEF a non-profit 501 (c)(3). Currently, such casks have been stored at plant locations, about 71 sites nationwide.

Congress, corporate lobbying, legislation, etc. are all hitting road blocks when it comes to dealing with national controversial "public policy issues" which government is struggling to resolve. One of these is the completion of the Yucca Mountain Repository. Issues can be resolved if only these entities would be more willing to negotiate variables. Industries who provide scientific analysis of energy technologies must coordinate with the government in educating the grassroots public on topics of this importance and magnitude. Government programs sometimes do not provide enough public awareness. We believe grassroots education by independent foundations such as USNEF by nature has a more palatable communication with the public.

A local message by a local "entity", engaging in local grassroots messaging, provides a greatly improved potential for "community friendly acceptance." We have to accept that bureaucratic stalemates are the process in Washington and they are not resolving important public problems. We need a paradigm shift in public policy messaging that reaches across party lines into the real world of the citizens affected by these programs. It is a long process to modify standard procedures, but it is important to evaluate procedures that reverse stalemate positions. If laws exist that disrupt progress, then let's change the law, especially if conditions exist that support unified progress.

We are recommending a method to rebrand the education about (nuclear waste) and nuclear power which has been demonized for half a century. The fact is that our current U.S. stockpile of about 71,000 metric tons has a limitless potential for economic development with applied science. In 2013, a paper submitted by Kenneth D. Kok, PE to the 15th International Conference on Environmental Remediation and Radioactive Waste Management. His baseline analysis was done on 70,000 metric tons of fuel from analytical data recorded by the Energy Information Administration. Based on fissionable isotopes in spent fuel, a rule of thumb for the energy value in these materials is 1 Megawatt Day per gram. His calculations indicate that the value of this 70,000-ton stockpile is $14 trillion dollars when extended through the entire cycle (2013) dollars.

The dilemma with Washington is the investment into a commercial reprocessing facility large enough for our current 70,000 MT (and more to be added annually) as the NRC has renewed 81 power plant reactors nationwide to run for up to 100 years. An inclusive reprocessing facility could cost between $33 and $45 billion but, its market value is in the trillions. Everything nuclear in cost calculations should be amortized over 70 years because that is the original designed functioning life of the first and second generation nuclear plants. Advanced technology and materials development can easily move this to 100 years.

The shutdown of Yucca Mountain has already cost taxpayers $12 billion in legal suits, estimated to be $20 billion by 2020. This is for non-performance by the contract of the DOE, for non-removal of the power companies' onsite nuclear storage. It would be much more practical for these funds to be applied to the construction of a national temporary storage facility basically storing it to a multi-trillion-dollar safe deposit vault. We know that the world's 270,000 MT of used fuel can be reprocessed, the issue has always been an economic investment, and market competitive costs when it is recycled. Also, with the development of molten salt reactors which are designed to be capable of burning that spent waste provides a secondary reusable market. When science and engineering provide a resolution, this is when Congress should focus on the logically based decision, making an educated constituent decision, for their public service, not on Congressional bickering.

Nevada has several locations that would be an excellent site for a national above ground spent nuclear fuel facility. Our current mission is to educate the grassroots constituents on the common sense of "logical" resolutions and having our citizens bring this message to their representatives to engage and solve.

There is a degree of consideration with or without the DOE completing or re-siting a permanent storage facility at Yucca Mountain. A high probably exists that the final selection site would be located in an expansive desert location in the Western U.S. This makes Nevada an ideal CENTRAL location for such a temporary above ground transfer facility. Nevada offers 100% security as our military test ranges provide a high-security profile over much of the desert land mass.

- There is a push in Washington to move more DOD operations and facility management to the private sector reducing the costs of military operations. This same push could be applied to the DOE, NRC and the management of SNF nuclear waste and its security. The private sector has developed much of our U.S. nuclear industry and throughout the world, yet federal agencies manage it through regulation which is necessary but, at the same time should require common sense. In most of these government verses private industry tag team events, the public almost always falls short in the educational process provided by the agencies and industry sector. Public policy must re-brand education about nuclear energy technology and its waste repository alternatives and economic facts.

- The establishment of an above ground SNF facility managed by the private sector would be an asset to all rural Nevada Counties providing jobs, taxes, and spinoff local commerce. Nevada needs to diversify its economy into advanced high technology and this can be encouraged by logical common since utilization of its land AND a successful education of its citizens in reprocessing technology.

- Projects such as this would include business development in rural areas for robotics, drone surveillance applications, high-tech concrete technology and many other spinoff services, construction, housing, restaurants, hotels, etc.

- When we consider that the AREVA Company in La Hague France receives 250 requests annually for plant tours of that high tech facility and the public walk on the floor underneath which, spent nuclear fuel remains, the notion that these sites are dangerous loses credibility. This is the message we need to bring to the grassroots public, **Reduce, Reuse, Recycle**. When government and this industry unite in this task, the people, (Congressional constituents) will re-frame "their" values to include the benefits of a nuclear repository site in Nevada.

- The current above ground systems we have developed over the past 40 years have proved their stability. There is no question that moving these casks to a "national SNF center" from 72 diverse locations around the country would be a much more secure resolution for the public.

- At the same time, this program would provide the resolution of removing these materials from power plants so that they can extend their operating licenses and continue operations based on their originally designed above ground storage facilities, not having to expand locally which would continue to offer a complex security situation.

- Another very important consideration is that we are aware that several of our National Laboratories, and other spent nuclear materials facilities, are experiencing leaks and additional capacity overloading. It is only fair to suggest that engineering, materials, and technology we had available for temporary containers 40 years ago were not expected to be capable of spent fuel radioactive lifetime safety. It is also only fair to suggest that most of these materials were planned to be moved to the Yucca Mountain facility 30 years ago. It is this political dilemma that has prevented our government agencies from accomplishing a safe timely management of our radioactive materials. We have to get this educational awareness into our public policy engagements and directly to the grassroots public. This is the mission of the US Nuclear Energy Foundation.

- USNEF is hopeful to generate and submit grant application funding and industry support that will provide us with the ability to get our nuclear advocacy and SNF educational materials to our citizens. Government, industry and its associations need to bridge this gap of public education.

The US Nuclear Energy Foundation one recommendation, would be for a National Above Ground Temporary Storage Facility for America's Spent Nuclear Fuel, at the Hawthorne Army Depot in Hawthorne Nevada. Currently, the power companies have these dry cask containers in some 71 + various locations at current and decommissioned nuclear power plants throughout the country. We believe that in the interests of national and Homeland Security that such items should be secured in a much safer remote location within our country that would better serve our national public interests. At the same time, it would place the Hawthorne Depot as a "Multi-Agency Facility" serving the Army, Navy, DOE, NRC, National Labs and other agencies requiring a secure repository of America's dangerous or classified materials and weapons disposal.

No matter what the "eventual" outcome is concerning the Yucca Mountain Study, there is a 75+ percent probability that any "national spent fuel storage OR reprocessing facility" would be sited in the Western United States. The temporary above ground storage in Nevada would be safe and central to its final disposition location.

Gary J Duarte, President, Director

US Nuclear Energy Foundation