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To: Virgilio, NMSS

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ADDRESSEE: Secretary of Energy Advisory Board

SUBJECT: Concerns the fast flux test facility

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cc: Chairman Nils J. Diaz  
Nuclear Regulatory Commission  
Washington DC 20555-0001

**PUBLIC COMMENT**  
**SECRETARY OF ENERGY ADVISORY BOARD**  
**WEDNESDAY, DECEMBER 10, 2003**

Esteemed Secretary of Energy Advisory Board:

On the eve of destruction of the **Fast Flux Test Facility**, please review the capability of the FFTF in view of worldwide commitments for Generation IV Research and Development.

USDOE NNSA Nuclear City Initiatives/Initiatives for Proliferation Prevention programs are developing nuclear R&D in Russia. To truly capitalize the technology transfer that we are paying for, we must have the FFTF for critically important fast spectrum testing. Without such testing in the USA, certification of new designs, fuels, materials and systems is questionable. Testing of nuclear fuel and materials in a foreign reactor, such as JOYO in Japan is technically limiting, and is proliferation and EIS problematic.

**The risk is too great that this unique capability cannot be re-established in the United States.** This high neutron flux technology is only found at the FFTF, and is too important to lose, considering Generation IV initiatives and the Advanced Fuel Cycle Initiative.

**The Future is Fast** Russian fast reactor development continues with the completion of the pilot BN-800 scheduled by 2010 with a thermal power over 2000MW. Fast reactor development is moving forward in China, India, and elsewhere. Russian designed reactors are now being built in China. Russian built MOX fuel is being burned in Japan.

March 28, 2003, Joint Statement by Jacques Bouchard, Hermann Grunder, and Yasuo Nakagami, *"(As) the accumulation of the various data necessary for the commercialization of fast reactor technology on a global scale is expected to be achieved through the operation of Monju, Japan should make every effort toward the early resumption of the reactor.... The importance of fast reactors and the associated nuclear fuel cycle is recognized world wide. Japan is expected to play a key role in providing irradiation test facilities for fast reactor fuel and in accumulating experience with fast reactor technology through the operation of a prototype reactor."*

I believe that the future of Monju remains uncertain. This uncertainty further begs for the maintenance of the capability found uniquely at the FFTF.

Dr. Crawford, Argonne West wrote, 4/24/03 *"...only FFTF or a new fast-spectrum reactor would provide the type of irradiation testing space required to test and then qualify a Generation IV fuel type.*

*There are foreign reactors that could be used, and I spent part of today discussing such a possibility with the Joyo reactor here in Japan, but it is not likely that we can get a foreign*

country to agree to allocating large portions of their test space for a US-driven irradiation testing program. Furthermore, to really derive benefit in the US, we would need to be able to fabricate the test fuel in the US, ship it to the foreign test reactor for irradiation within our specifications, and then return it to the US for post-irradiation examination..." in an earlier email, Dr. Crawford wrote, "...In fact, it remains to be seen whether any U.S. nuclear energy initiative can be successful if we do not have the will to operate our own test facilities."

### The U.S Generation IV Implementation Strategy

USDOE Nuclear Energy, Science and Technology - 03GA50439-06

[http://nuclear.gov/reports/Gen-IV Implementation Plan 9-9-03.pdf](http://nuclear.gov/reports/Gen-IV%20Implementation%20Plan%209-9-03.pdf)

### **Preparing Today for Tomorrow's Energy Needs**

*(third bullet – page 8)*

- Fast-spectrum fuels testing ... is needed. The longer-term development needs of sustainable systems require fast spectrum irradiation testing. Such capability does not exist in the United States, and the limited capabilities in the world are in decline. **Options for reestablishing this capability in the United States need to be developed and evaluated**, including the possibility of a new fast neutron research facility. [my opinion: "including maintaining the FFTF"]

Idaho, USDOE's nuclear R&D command center, has repeatedly submitted proposals for the capability of the FFTF. NERAC pleaded that the "only option" is the restart of FFTF. The 2001 shut-down ROD based the future on Advanced Accelerator concepts which have subsequently been rejected by DOE in favor of the fast reactor path. This change of policy direction requires NEPA supplementation.

Do we really want foreigners to control our energy future? Thus, we open the door for unforeseen political and diplomatic pressures to be leveraged against the USA in a key energy area. Nuclear energy provides over 20% of national electricity production. This capacity will soon require replacement and upgrade,

In light of the current diplomatic tension between the USA and Russia, is it in the national interest to rely upon Russia for all Pu-238 requirements? USDOE-IG is concerned. Oak Ridge lacks Pu experience. In the 2000 PEIS, the FFTF was the logical facility to develop the PU-238 production.

The list of needs for radioisotope production for industry, science, space exploration, medicine are expanding at an expanding rate. HHS Secretary Thompson wrote to Secretary Abraham about his concerns for the availability of medical isotopes for the community at large. Marc Garland recently wrote to Senators Murray and Cantwell regarding the need for Moly-99 productive capability. Moly-99 is used in more than 40,000 medical procedures in the USA per day.

Undersecretary Card based a decision on his preference for building a new facility. This statement alone requires a supplement to the ROD. In light of the current Energy Policy fiascos, how likely and in what time frame can the USA "reestablish" this unique capability? The FFTF took over 15 years and \$1.2 billion to build, during a time when nuclear energy was a national energy policy imperative. At that time, nuclear technical expertise, industrial capability, and a highly technical workforce were available.

FFTF Environmental Statement, May 1972, "*The FFTF is a much needed and logical research and development step... Operation of the FFTF will provide this country with the most powerful tool in the world for exploring the complex behavior of fuels and materials in a controlled fast neutron flux of high intensity...*"

**The Fast Flux Test Facility is still available!** But, not for long. Decommission Environmental Impact Statement is not yet prepared. But, the EIS is Judicially ORDERED, 2/28/03! Why decommission an facility whose capability is now recognized as needed? The cost to reestablish is \$5 billion dollars, and 15 years, if ever! The RISK to LOSE CAPABILITY FOREVER is too great! Heating cost to maintain cooling loops is only \$5 thousand per month!

Destructive decommissioning activities must be halted until there is time to compete a reevaluation of FFTF future uses in nuclear energy and isotope production.

Required Actions: 1) Turn on the outer loop heaters. 2) Convene a multi-cabinet meeting to discuss the capability of the FFTF. 3) Start the Environmental Impact Statement.

There are very few people in a position to change the course of events that will very soon wreck a unique, multi-billion dollar asset that is required to maintain USA's nuclear stature in the international community, and to provide a sufficiently large production platform for medical and commercial isotopes.

Respectfully submitted:



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December 6, 2003