

**From:** "Dave Ritter" <dritter@citizen.org>  
**To:** <BrownsFerryEIS@nrc.gov>  
**Date:** 5/7/04 3:25PM  
**Subject:** Comments on BrownsFerry EIS Scoping

3/10/04  
69 FR 11462

To Whom It May Concern:

Please find attached below, in Microsoft Word format, comments from Southern Alliance for Clean Energy and Public Citizen's Critical Mass Energy & Environment Program, regarding the scoping for the EIS pertaining to the operating license renewal of the Browns Ferry reactors. I am also pasting the comments below. Please feel free to contact me if you have any questions or concerns regarding these comments. Thank you.

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Sincerely,

David Ritter

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May 7, 2004

Chief, Rules & Directives Branch  
Division of Administration  
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U.S. Nuclear Regulatory Commission  
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MAY 17 AM 9:59  
Rules and Directives Branch

Re: Federal Register / Vol. 69, No. 47, March 10, 2004, pp. 11463-11465, NOI to Prepare an EIS and Conduct Scoping Process for TVA Browns Ferry Nuclear Plants, Units 1, 2, and 3, Renewal of Facility Operating Licenses, DPR-33, DPR-52, DPR-68 for an additional 20 years of operation

Southern Alliance for Clean Energy (SACE) is a regional not-for-profit, nonpartisan conservation and energy consumer organization focused on energy policy, including nuclear concerns, for well over twenty years with members throughout the Southeast.

Public Citizen's Critical Mass Energy and Environment Program is a national non-profit organization that works to protect citizens and the environment from the dangers posed by nuclear power and seeks policies that will lead to safe, affordable and environmentally sustainable energy. Public Citizen accepts no corporate or government funding.

Economics

Tennessee Valley Authority (TVA) has a congressionally mandated debt ceiling of \$30 billion. TVA is currently carrying a debt of approximately \$25 billion along with other obligations that could be construed as debt (e.g. leaseback contracts, pre-purchase of electricity, etc.) that are between \$3-5 billion, bringing them very close to exceeding that debt-ceiling. With estimates of \$1.8 billion for the restart of Browns Ferry Unit 1, TVA is close to meeting or

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exceeding the \$30 billion limit. The Nuclear Regulatory Commission (NRC) should thoroughly review the economic situation at TVA along with the estimated cost projections of relicensing the three Browns Ferry nuclear reactors, along with other projected costs associated with other projects.

#### Reactor Design

The Browns Ferry nuclear plant is a BWR-Mark I GE-4 design which has numerous inherent safety flaws: the spent-fuel pool is elevated above ground level and is vulnerable from above; the reactor itself is located above ground level; and it lacks a traditional "containment dome" and instead has a thin steel shell. In light of terrorism concerns, which are essentially ignored in the relicensing process, the BWR facility is also vulnerable to attacks such as those posed by shoulder-launched missiles. Though the NRC will inevitably disregard these concerns, we believe that they are relevant to be reviewed during this process.

Directly relevant to Browns Ferry Unit 1 concerns about restart and the subsequent operating extension are the accident projections from the Brookhaven National Laboratory Study in 1997 for a closed BWR for an area within 50 miles of the plant: population dose of 38 million rem, 15,300 latent fatalities, 140 square miles of condemned land, and a cost of \$48 billion (NUREG/CR-6451, April 1997). Not only does TVA propose to restart Unit 1, but also to increase its generating capacity, despite its lack of actual operating experience. This decision is troubling given that aging concerns of the nuclear power plant, including degradation, deterioration, and embrittlement, are commonplace.

TVA has projected to run Browns Ferry at a 93% capacity factor even though no other utilities or nuclear plants are achieving these factors with BWR designs (BWRs are averaging capacity factors in the low to mid 80% range). Further, Unit 1 has not operated since 1985 and when it did operate, it had a low capacity factor. The NRC should research realistically achievable capacity factors and require TVA to address the "gap" in capacity factor that will result, inevitably affecting the costs of electricity generated by the plant.

#### Decommissioning

The NRC should evaluate the decommissioning trust fund balances for TVA's Browns Ferry units and how decommissioning will be impacted by extending the operating licenses of all three units. The NRC should also ensure that sufficient decommissioning funds would be in place in order to protect utility ratepayers and taxpayers. According to a General Accounting Office (GAO) report in 2003, all of TVA's nuclear power plants were found to be below the benchmark of sufficiency for decommissioning trust fund balances with the Browns Ferry units being among nuclear plants with the poorest decommissioning fund status. This is extremely problematic.

#### Environmental Impacts

**Water Use:** Concerns over water supplies have greatly increased since the Browns Ferry nuclear power plant was built in the late 1960s to early 1970s. Water policy issues in the southeast have reached contentious proportions as exemplified by the "water wars" that have

occurred in nearby Georgia, Alabama, and Florida. The Nuclear Regulatory Commission should evaluate the impacts of extended generation from a regional perspective and should investigate state-level political concerns that may affect that ability to dedicate large water resources for extremely long periods of time. Nuclear power plants require tremendous volumes of water in order to safely operate, which greatly impacts surrounding waterways. The Browns Ferry nuclear plant uses once-through cooling with "helper towers" [historically, the site had wooden towers which are not acceptable—see PNOII-86-034 and PNOII-96-039 in which there were fires] and withdraws from the Tennessee River, a river system that has many large facilities relying on it. Each unit has a condenser flow rate of 630,000 gallons a minute (as reported in NUREG-1437, vol. 2, 1996, p. A-10). Since Unit 1 has not operated since 1985, and all of the reactors came on-line for a time in the mid-to-late 1970s, thorough water withdrawal and water consumption analyses, along with fish and vegetation studies, must be done using updated data (not referring back to original operating license information). Further, the impact of the water withdrawn and its effect on the flow of the Tennessee River should be evaluated not during just "normal" conditions but in times of drought, which have impacted the region when Browns Ferry Unit 1 was not even operating. The NRC should require updated water use information for the region on current water needs, as in what industries and municipalities are currently using and are projected to use in the future as population centers continue to grow.

**Terrestrial Impacts / Concerns:** New data on the status of federally and state-listed endangered or threatened terrestrial animal, aquatic, and plant species should be required and studied as to the impacts of an additional 20 years of operations per reactor. Proper notification to, along with creation of working relationships with, state agencies, Fish and Wildlife Service, and National Marine Fisheries Service should occur.

#### Analysis of Alternatives

In our experience, the relicensing process has generally provided an inadequate analysis of energy alternatives. The NRC should investigate TVA's projected energy needs as they have a history of overestimating their power output (i.e. TVA projected in the 1970s that they would need to build 17 reactors). For instance, TVA has not produced an Integrated Resource Plan in the past five years that would document a need for this action to take place. TVA should be required to explore energy efficiency and conservation measures that could be implemented in within their service territory to offset the needs of license extension. In addition, other electricity generating technologies, such as solar, wind, and biomass should be investigated.

Additionally, we believe that it is imperative that the NRC consider the following safety and security issues as part of any environmental impact statement regarding the renewal of the operating licenses at Browns Ferry 1, 2, and 3:

#### Security of the Browns Ferry plants in the post-9/11 age

The dangers to public health and the environment from a completed terrorist attack are enormous. The NRC conceded soon after 9/11 that

the design basis threat for which nuclear power plants are constructed to be able to withstand does NOT include impacts from jetliners of the type used on 9/11. Considering that nuclear power plants would be a prime target for terrorists, the perennial tension between the industry's desire to cut costs in order to appear economically viable and the significant expense of thorough, effective security is now all the more salient after we have witnessed a massive terrorist attack within our nation's borders. The challenges involved in making Browns Ferry absolutely secure against a terrorist attack from outside the plant perimeter would be enormous, both financially and logistically, and only further highlight the hopeless nature of attempting to provide complete safeguarding and security of this inherently dangerous technology. For instance, to place anti-aircraft weaponry at a nuclear plant would involve developing protocols for determining when/how an aircraft is presenting a clear threat, who would be authorized to operate the weapon, and who would decide when to fire on an aircraft. Additionally, any weaponry onsite at a nuclear facility must also be secured such that it could not be used by saboteurs or intruders that successfully gain onsite access. Further consideration must be made of the considerable hazard that residents would face in the event of an accidental firing of the weapon, or the consequences that would result from an engaged target being missed. Clearly, the mere presence of such weaponry would only add to the risks already faced by the communities surrounding the plant, and is ultimately an untenable security solution.

Security of the "spent"/irradiated nuclear fuel pools at Browns Ferry is also another issue that must be seriously addressed in evaluating TVA's application for license renewals for the three reactors. Currently, the highly radioactive "spent" fuel from the Browns Ferry reactors is stored in fuel pools that are located in buildings which could hardly be described as robust. The pools are also situated several stories above ground-level. The vulnerability of these pools to a 9/11-style terrorist attack is real, and it is substantial. Neither the opening of Yucca Mountain nor the creation of an independent spent fuel storage installation (ISFSI) onsite will reduce the dangerous vulnerability of the fuel pools at Browns Ferry. Despite its ultimate destination, all nuclear fuel that is removed from the reactor core must be moved, at least temporarily, to the fuel pools, to allow for cooling. This cooling of the fuel takes several years. With or without the existence of an operating Yucca Mountain or an ISFSI at Browns Ferry, there would always be a need for a spent fuel pool at the facility. And without massive reinforcement and hardening these fuel pools are extremely vulnerable to attack or sabotage. Further, spent fuel casks, both for onsite storage and for transportation, have not undergone adequate testing to demonstrate thorough safety and containment of radiation, both during normal usage and during various accident scenarios. Again, the industry's inclination to take every opportunity to cut costs (in attempting to make nuclear energy appear remotely viable, economically) creates a disturbing tension here, with nuclear utilities gravitating towards the casks that are cheapest and the least tested.

In all likelihood, license renewal at Browns Ferry reactors would exacerbate existing space issues regarding onsite spent fuel, and create 20 years' worth of additional, dangerous high-level waste, with no

practicable or thorough means of securing it.

It should also be noted the less robust nature of the control room buildings, where a successful attack could jeopardize proper operation and cooling of the reactor, and risk meltdown. As long as these reactors are operating, this is yet another system that needs extensive hardening and fortification, and added security overall.

The cost of such massive security measures would need to be covered fully by the nuclear utilities, and not the ratepayers or taxpayers. It would be utterly irresponsible to renew the licenses for Browns Ferry 1, 2 or 3 and force the costs of such safety and security upgrades on the endangered public, especially if the upgrades themselves are inadequate or further endanger the public. These licenses should not be renewed, but to do so without mandating stringent and thorough requirements for massive safety and security upgrades would also be reckless and irresponsible.

#### Simultaneous Occurrence of Restart and Renewal Application for Browns Ferry Unit 1

Finally, we must comment on the unprecedented attempt by TVA and the NRC to simultaneously restart Browns Ferry 1 (after nearly 20 years in the non-defined regulatory status of "administrative hold") and extend its operating license for 20 additional years. Because Browns Ferry should rightly have had its operating license revoked after it was shut down in 1985 due to a "failure at [Browns Ferry Nuclear Plant] to consistently maintain a documented design basis and to control the plant's configuration in accord with that basis," the plant should now be required to go through NRC's license application process, just as any new plant would. Twisting NRC's administrative process for restarting problem plants on temporary shutdown, Inspection Manual Chapter 0350, to resuscitate a plant that has been all but left to crumble for nearly 20 years is an approach that's just too convenient for TVA. To ensure optimal safety at the plant, TVA should be required to bring everything to plant up to current design technical specifications (as described in over 1,200 letters that NRC has issued to licensees since Browns Ferry's shutdown), and then apply for a new license. If, after some period of operation without disaster following a restart, TVA could then apply for a license extension. To attempt to do both simultaneously only further bolsters the case that the NRC is captured by the industry it is charged with regulating, and it is once again greasing the skids for a licensee to just coast through substantive, safety-related problems without serious oversight and regulation of their activities.

We appreciate this opportunity to comment during this scoping process, and trust that our comments will be taken seriously.

Sincerely,

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