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10/15/2010

December 28, 2010

75 FR 63518

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2011 JAN -5 AM 9:36

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The U.S. Nuclear Regulatory Commission
Rules, Announcement, and Directives Branch
Mail Stop TWB SB01 M
Washington, DC 20555-0001

**Docket ID NRC-2009-0435 : Draft Environmental Assessment for License
Renewal, Nuclear Fuel Services in Erwin, Tennessee**

Dear Chief Bladey:

I attended the public hearing the Commission held in Erwin, on October 26, 2010 and there submitted written comment on the Draft EA and license-renewal matter. Resulting from hearing citizen comments at that meeting, revelations such as of uranium contamination far downstream in the Nolichucky River made by a French Broad Riverkeeper, and my own re-reading of the Draft EA document, I wish to submit further remarks and suggestions. Please accept, for the record, my comments; below, additionally to my 10/26/10 suggestions:

I thank the Commission for accommodating a deadline extension for citizen input on this license-extension application.

Attention to the matter of looming dangers from changing climate, part of my concerns in the earlier comments, is inadequate--practically absent--in the EA. It is given all too cursory treatment--basically a statement on page 2-4 that the facility determined its emissions to be below the cut-off for mandatory reporting and citation (page 3-13) of a World Resources Institute (outdated) estimate of carbon dioxide equivalents for the state of Tennessee. Detail and quantification are lacking for the greenhouse gases output associated with various, e.g. transport-related and other activities by the facility, nor is its impact potential for the region discussed. Climate information as provided on page 3-9 (Table 3.8) is equally insufficient, and misleading as presented, as it cites 30-year averages in monthly temperatures and precipitation. Choice of a time frame going back to 1970 and exclusion of monthly temperature data for all the years since 2000 result in an obscuration of the ongoing warming and drought-vulnerability trend.

Indeed, the hottest-months temperatures are no longer in the 70-degree range; they have been in the high 80s and 90s-degree range, instead. The presentation of incomplete and long-term average temperature data is counter to citizens' realistic experience of ongoing climate disruption with its implications for the region's water resources and environmental and human health.

As described in *The Tennessean* in July, a study report on climate change, by experts at the Environmental Protection Agency, Oak Ridge National Laboratory and other institutions warns that the southeastern states, Tennessee included, could face the very worst of climate-disruption risks in the future. It seems to me especially inappropriate, therefore, that impacts assessment from ongoing and looming climate change, including on the water body (Nolichucky River) into which the facility discharges or risk of radiation spreading should wildfires such as in Russia this year engulf nearby Cherokee NF areas, is omitted from the EA. Instead of being ignored in a permit application for the length of time (40 years) requested by the facility, the climate-damaging emissions from its various

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activities, and the ecological and health risks involved, should be part of a thorough, i.e. an Environmental Impact State assessment.

I recommend such an assessment prior to license extension.

Too little, and partially unclear/confusing information regarding radiation exposure and hazards is provided in the EA. One notes that exposure can come through surface runoff over uranium-contaminated soils (Tables 2-2, 2-3); through uranium processing operations and radioactive wastewater generated in them, and through air venting (Table 2-5). The tables and text descriptions lack clarity as to which of a large number of radioactive isotopes/radionuclides are being monitored and are being discharged into the Nolichucky River. The text for the last mentioned table (2-5) states it to be a listing of "radionuclides expected in airborne effluents," yet a much longer list makes up a second, "liquid effluents" column which lacks any mention in the text. The former tables (2-2 and 2-3), in the descriptive section "Effluents to water," contain only three uranium isotopes; however, the last table (2-5) suggests that the long list of additional radioactive elements also is discharged into the River. Only late in the EA (page 3-26, 3-27), Table 3-13 gives a summary listing of the radionuclides and effluent routes, along with description of facility estimates of dose equivalents the public would experience. In the final paragraph of that section (p. 3-29) two tables (3-12, 3-13) are incorrectly stated to show the non-radiological contaminants emitted into water; however, the first (3-12), instead, summarizes time-lost and incident rates for facility workers, the second (3-13), instead, summarizes the radionuclides at all effluent sites, not water alone.

Many issues of concern regarding radiation exposure are left undressed. Among them are lack of data on the findings from the monthly, quarterly or annual testing the facility is said to perform, their verification through testing by independent parties, and, most importantly, discussion of the medical and environmental hazards when numerous radioactive elements -- invisible, taste- and odorless to people and other organisms exposed to them -- end up in our air and drinking water. Although the facility is said to perform "vegetation sampling for radioactive content," no resultant data are given. Some radioactive elements are known to concentrate in plants, then to be taken up and concentrate in organisms that consume the plants. Grass in Wales, mushrooms in Alpine regions on the continent, radiation meat contamination in huge numbers of wild boar in Germany a quarter-century following the fall-out from the Chernobyl reactor explosion amply attest to the seriousness of this problem. To allay public concern regarding it, the testing data alluded to (page 2-8) -- what plants selected, their exposure outcome over time and with different radioactive elements, and over what distance from the facility given aerial spread of the contaminants -- these and other, health-relevant information should be fully provided. The revelation, at the October 26 public hearing, of radioactive soil contamination at great distance downstream of the facility discharge location emphasizes the risks to our drinking water supply and public health, when exposure routes and extent are not fully known or properly contained.

One notes the assertion of an ALARA program (page 2-8) according to which the facility "[keeps] radiological exposures and effluents as low as reasonably achievable." The medical effects of low-level radiation exposure for people (and, presumably aquatic and other organisms) being well known, it should be a given -- and assured by your agency -- that nuclear facilities are run with the lowest effluent levels technically achievable. The NFS facility's history with its ALARA program, with data demonstrating

successive and successful effluent reduction, should be made available in explicit terms, not merely asserted to exist.

These and other issues pertaining to health risks to the surrounding and downstream population, from extensive if low-level radiological exposure, should be comprehensively studied and addressed, in Environmental Impact Statement assessments. I urge these be done.

My concerns extend, further, to the "No impact" judgment for the region's Ecology (section 3.7), especially its botanical assets. Lists of these (and of "the" animals known to be found in the area), per the description on pages 3-22 and 3-23, are contained "in the Appendix."

The Appendix consists of Tables 1 through 5. They and their cover sheet are identified as summarizing the flora and fauna in the region around a company (Nuclear Field Services) which is not the firm (Nuclear Fuel Services) whose license application is the matter at hand. The public should assume, therefore, that either (a) the information provided and conclusions from it are irrelevant since involving a different applicant, or (b) evidences an egregious lack of care in preparation, review and evaluation of the material to be provided in license applications.

It would appear from the EA that a competent, professionally conducted botanical assessment has not been performed. For the facility site itself, it is stated that "no vegetation surveys have been conducted" (p. 3-22). More importantly, for the surrounding Region, the collation of "Vegetation" in Table-1 appears to rest on reports from the facility, primarily, and enumeration of trees, shrubs, flowers gleaned from various plant compilations. The Table's total of 45 (only) enumerated plants would be more suggestive of a patch of desert than of the Blue Ridge Mountains Region of which we are a part. More than a third of the enumerated plants are not identified at the species level, the diversity of plant life that could be vulnerable to impacts from facility emissions and activities, and that area citizens know to be present thus unacknowledged.

A very few examples -- flowers abundant in or known to be present in Unicoi or adjacent counties yet missing from the list-- may serve to exemplify the inadequacy of assessment of what is presented as the "Vegetation in the Region." The table contains none of our phlox species, nor any violets or sorrels, not the (often exuberantly abundant) morning glories or bindweeds, not the lobelias we have that complement the cardinal flower, not evening primroses or the jewelweeds, not various sunflowers nor the birthwort members in our woods such as wild and Shuttleworth ginger, not our several milkweeds other than *Asclepias incarnata*, not the boneset, thoroughwort and other Joe-pye we have (in addition to *Eupatorium purpureum*), nor our woods' various trilliums and orchids.

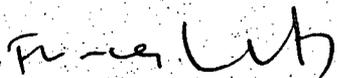
In considering our botanical and biological assets, the Region of Influence (ROI) for the facility must be viewed as wider than the direct, Erwin and Chestoa quadrangle area for which alone the EA lists endangered plants (Table 5). In Unicoi and adjacent counties, the Cherokee NF lands contain a large number of additional, rare and threatened plants. The fireweed and purple-leaf willow herb, the giant blue cohosh, marsh bellflower and spreading avens are examples among the all-too-many Heritage-Program listed flowers that are still present here but seriously or critically imperiled.

For possibly hundreds of our region's plants that even now are in precarious or unstable condition, the possible impacts of air- and other pollutant emissions from the facility could be serious, especially as

they would amplify the stresses to plant communities from global climate change. The EA's study of our botanical-ecological assets, and potential impacts over the long future time-span being considered is inadequate. I urge that it be supplanted by a comprehensive, professionally conducted assessment, in an Environmental Impact Statement.

Thank you for considering my comments.

Sincerely,



Frances Lamberts