

Ms. Pam Gorman
Y-12 SWEIS Document Manager
Y012 Site Office
800 Oak Ridge Turnpike, Suite A-500
Oak Ridge, TN 37830

4 April 2011

Dear Ms. Gorman,

An article in the *Knoxville News-Sentinel* (Y-12 seismically at risk: 9212 complex could be damaged, disabled by major quake, official says) on 31 March 2011 casts new light on the seismic conditions of current facilities and underscores OREPA's concerns, first raised in 1994 and repeatedly in the succeeding years, about the structural integrity of facilities at Y12.

In the *News-Sentinel* article, DOE/NNSA spokesman Steven Wyatt says, "Safety analyses show that a major earthquake could result in significant structural damage and process failure." This statement validates concerns first identified publicly in 1993 when the Department's Safety Survey was released in response to a Freedom of Information Act request.

This article compels me to amend OREPA's previous comments on the Y12 Final Site-Wide Environmental Impact Statement to make sure DOE/NNSA is aware of the level of concern we have for the seismic issues surrounding the future of Y12, the subject of the SWEIS.

The Y12 Final SWEIS does not include a thorough assessment of risks associated with ongoing operations at Y12 in the "No Action Alternative," and provides an inadequate evaluation in its accident scenarios. According to the Final SWEIS, the bounding accident scenario is a jet crashing into a building at Y12; risks associated with an earthquake are subsumed under the "major fire" analysis. The description of methodology and analysis presented in the F-SWEIS is limited, but it is an error to imagine the risks of an airliner crash are greater than a reasonably foreseeable earthquake; it is also reasonable to postulate damage from an earthquake that exceeds a major fire. A significant earthquake is likely to impact multiple facilities at Y12; sections of Building 9212 are not the only structures at risk of structural failure and collapse. In addition, an earthquake carries the potential for other catastrophic damage—access roads for emergency response vehicles may be rendered impassible, emergency response equipment may be damaged, emergency response capacities may be overwhelmed as the damage from a major earthquake is unlikely to be limited to Bear Creek Valley, waste storage tanks and facilities may be compromised or even rupture, multiple major fires and the failure of systems intended to suppress fires is likely. The point is the risks associated with a significant earthquake must be added to the risks of a major fire. Consideration of these cumulative impacts represents a bounding accident scenario.

These events are reasonably foreseeable. An April 1994 study¹ led by researchers at the University of North Carolina, Chapel Hill contradicts the methodology adopted in the Y12 SWEIS. The SWEIS bases predictions of future seismic activity on the seismic history of Oak Ridge. But the UNC report says the high frequency of low-level seismic activity indicates a concentration of stresses and suggests the record of past activity can not be relied on as a predictor of future activity but rather is suggestive of a significant seismic event in the future.

DOE/NNSA must amend the Final SWEIS to provide the public with information related to seismic concerns and the steps being taken to ameliorate those concerns; in the process, DOE/NNSA should hold a formal hearing to receive comments from the public and incorporate those comments into its decision-making process as reflected in the Final SWEIS. Until DOE/NNSA completes this process, a Record of Decision is premature.

Thank you for your attention to these concerns.

Sincerely,

Ralph Hutchison, coordinator
Oak Ridge Environmental Peace Alliance

1. A Seismotectonic Model for the 300-Kilometer-Long Eastern Tennessee Seismic Zone, Christine A. Powell, G. A. Bollinger, Martin C. Chapman, Matthew S. Sibol, Arch C. Johnston, and Russell L. Wheeler. *Science* 29 April 1994: 686-688. [DOI:10.1126/science.264.5159.686]

ABSTRACT

Ten years of monitoring microearthquakes with a regional seismic network has revealed the presence of a well-defined, linear zone of seismic activity in eastern Tennessee. This zone produced the second highest release of seismic strain energy in the United States east of the Rocky Mountains during the last decade, when normalized by crustal area. The data indicate that seismicity produced by regional, intraplate stresses is now concentrating near the boundary between relatively strong and weak basement crustal blocks.