

November 10, 2011

UNITED STATES OF AMERICA  
U.S. NUCLEAR REGULATORY COMMISSION  
BEFORE THE COMMISSION

In the Matter of )  
AP1000 Design Certification Amendment ) NRC-2010-0131  
10 CFR Part 52 ) RIN 3150-A18

PETITION BY THE AP1000 OVERSIGHT GROUP ET AL.  
TO REQUIRE DESIGN ISSUES TO BE RESOLVED  
PRIOR TO CERTIFICATION

NOW COME the AP1000 Oversight Group, the North Carolina Waste Awareness and Reduction Network (NC WARN) and Friends of the Earth (collectively the “Oversight Group”) with a petition for the Commission to require the resolution of design issues with the Westinghouse-Toshiba AP1000 reactor prior to the certification of the AP1000 reactor design and operating procedures. This petition is supported by the attached report, “Fukushima and the AP1000,” by Mr. Gundersen, chief engineer of Fairewinds Associates, and the previous filings by the Oversight Group in the rulemaking docket on the AP1000 certification, NRC-2010-131, and direct filings with the Commission.<sup>1</sup>

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<sup>1</sup> On April 6, 2011, the Oversight Group filed its Petition to Suspend AP1000 Design Certification Rulemaking Pending Evaluation of Fukushima Accident Implications on Design and Operational Procedures and Request for Expedited Consideration filed with the Commission and in this rulemaking docket. The Oversight Group filed additional comments on April 20, 2011 in conjunction with the Emergency Petition regarding the Fukushima lessons learned filed in the various licensing and rulemaking dockets. The Oversight Group filed additional comments in the rulemaking docket on May 24, 2011. On June 16, 2011, the Oversight Group filed a Request to Reexamine the Rulemaking on Certification of AP1000 Reactors with the Commission and in the rulemaking docket. On August 11, 2011, the Oversight Group filed Supplemental Comments by the AP1000 Oversight Group et al. Regarding NEPA Requirement to Address Safety and Environmental Implications of the Fukushima Task Force Report, supported by a declaration of Arjun Makhijani, Institute for Energy and Environmental Research. On September 28, 2011, the Oversight Group filed supplemental comments regarding the failure of rulemaking. On October 19, 2011, the Oversight Group filed supplemental comments to the Commission on a newly disclosed design flaw with the turbine building.

The Oversight Group understands that the NRC staff has signed off on the AP1000 certification and that the certification package was submitted to the Commission on or about October 21, 2011. The certification package was not available for public scrutiny until November 2, 2011 when it was placed in ADAMS.<sup>2</sup> We are disappointed the Staff did not respond to, or even analyze, most of the comments by the Oversight Group and others.

In its May 10, 2011, memorandum, the Commission through Ms. Annette L. Vietti-Cook, Secretary, stated "Comments received after May 10, 2011 will be considered if it is practical to do so, but assurance of consideration of comments received after that date cannot be given." In its response to the public comments, the NRC staff gave the significant safety concerns presented to it that were filed after the comment period only a peripheral review, and even though these concerns should have been identified and resolved by the Westinghouse-Toshiba and the NRC Staff in at least one of the 19 revisions to the AP1000 Design Control Documents. Instead it used an arbitrary cutoff date of June 30, 2011, for comments that they had to review, and simply refused to even respond to any of the other concerns, even fundamental flaws or newly disclosed issues directly affecting the safety and even the viability of the AP1000 reactors. In its Memorandum and Order, CLI-11-05, September 9, 2011, the Commission addressed the Oversight Group's concerns by referring its comments and petitions to the Staff to be resolved in the Rulemaking Docket, NRC-2010-0131. In its Order the Commission ruled that

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<sup>2</sup> NRC Responses to Public Comments, ADAMS ML112212319.

[we] Refer to the NRC Staff those elements of the Petition that relate specifically to design certification, for consideration as rulemaking comments. Refer to the NRC Staff for resolution as comments in the AP1000 rulemaking proceeding, all additional filings relevant to the AP1000 rulemaking proceeding.

The NRC staff has failed to do so, using the arbitrary cutoff date to ignore significant flaws with the AP1000 reactor, and again, not requiring Westinghouse-Toshiba to resolve these issues in the certification process.

The result is that the issues raised by the Oversight Group and others will in all likelihood be arbitrarily, if not unlawfully, resolved on a case-by-case basis during the construction of the reactors. Each reactor licensed and constructed following the “certified” AP1000 reactors will be a pilot project, using an experimental design that has not been properly reviewed and analyzed. For new reactor designs currently under review, safety issues should be resolved at the design stage, to the extent practical. Consistent with the long-standing Commission policy encouraging standardization, it would be prudent to implement safety enhancements prior to certification or design certification renewal. The NRC staff has failed to conduct its review function and supervision over the certification process in a meaningful manner.

We further understand that the Commission may decide in the near future whether to certify the AP1000 design and operational procedures or send the certification package back to the NRC staff for further analysis and the resolution of safety issues. We urge the Commission to take this latter action, because it is the only lawful action the Commission can take under the Atomic Energy Act, 42 U.S.C. §2011 *et seq.*, and the National Environmental Policy Act, 42 U.S.C. §4321 *et seq.* are to protect public safety, public health and the environment. If the AP1000 reactors are

certified without analysis and resolution of the major design flaws presented to the NRC, a combined operating license (“COL”) cannot be issued because the COL application (“COLA”) is incomplete. A COLA must include:

a preliminary analysis and evaluation of the design and performance of structures, systems, and components of the facility with the objective of assessing the risk to public health and safety resulting from operation of the facility and including determination of the margins of safety during normal operations and transient conditions anticipated during the life of the facility, and the adequacy of structures, systems, and components provided for the prevention of accidents and the mitigation of the consequences of accidents.

10 C.F.R. § 50.34(a)(4). The two possible reactor projects using the AP1000 reactors having any chance of beginning construction in the near future, the proposed Plant Vogtle reactors in Georgia and the proposed Virgil C. Summer Nuclear Station in South Carolina, have both adopted the AP1000 DCD Revision 19 by reference. Unless the issues related to the AP1000 reactors are safely resolved in the certification process, neither of these reactor projects have a complete COLA that provides the NRC with the required information and analysis to assess the risk to public health and safety. If a COL is granted based on the inadequate and incomplete COLA, redesigns and changes in work orders based on the public comments and the Fukushima “lessons learned” will likely cause considerable delays and cost overruns.

As briefed more fully in the Oversight Group’s supplement comments of August 11, 2011 addressing the Fukushima Task Force recommendations and lessons learned, the National Environmental Policy Act (“NEPA”) requires federal agencies to supplement their NEPA documentation when “there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts.”

40 C.F.R. § 1509(c)(1)(ii). A federal agency's continuing duty to take a "hard look" at the environmental effects of their actions requires they consider, evaluate, and make a reasoned determination about the significance of this new information and prepare supplemental NEPA documentation accordingly. *Warm Springs Task Force v. Gribble*, 621 F.2d at 1023-24; *Stop H-3 Association v. Dole*, 740 F.2d 1442, 1463-64 (9th Cir. 1984). The need to supplement under NEPA when there is new and significant information is also found throughout the NRC regulations. See 10 C.F.R. §§ 51.92(a)(2); 51.50(c)(iii), 51.53(b), 51.53(c)(3)(iv). The NRC has failed to examine the "new and significant information" stemming from the Fukushima accident. It is the NRC, and not the public, which is responsible for compliance with NEPA. *Duke Power Co. et al.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, 17 NRC 1041, 1049 (1983).

These are not trivial matters that can be arbitrarily overlooked by either the NRC staff or Westinghouse-Toshiba. As demonstrated conclusively in Mr. Gundersen's declaration, there are major unresolved issues stemming from the lessons learned from the Fukushima accident, but also exemplifying some of the fundamental flaws with the AP1000 reactor:

- additional heat load on the containment from post-criticality
- the loss of the ultimate heat sink (LoUHS) and the containment/shield building interface;
- LoUHS and cooling the spent fuel pool;
- containment integrity;
- multiunit site accident interactions; and
- design basis events.

These require immediate technical review rather than postponing resolution to the construction stage. Further, a full review of the Fukushima accident could confirm Mr. Gundersen's conclusions and even determine that the AP1000 has other fatal design flaws.

It has been the long-standing policy of the NRC to decouple siting from design; design issues should be resolved during certification, rather than in the licensing process. Severe accident issues are design issues, and the NRC staff concluded in SECY-91-0041<sup>3</sup> that severe accident mitigation design alternatives (SAMDA) "should be addressed as part of the design certification process" rather than later in the process after a license is issued and construction begun. Contrary to the recent Commission action to amend the final rule on the Advanced Boiling Water Reactor design certification to include the consideration of aircraft impacts,<sup>4</sup> it appears that the resolution of significant safety issues relating to the AP1000 reactors may be postponed to some future date. The Oversight Group finds it extremely troublesome that the NRC is considering drastically revising this policy based on political expediency and the impetus to license a new reactor, any new reactor, at any cost. If the design is certified, the applicants at Vogtle and Summer will immediately demand licenses. The schedule of the applicants does not constitute an adequate reason that certification should be decided now. The utilities were aware of the risks and the schedule slippages they

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<sup>3</sup> NRC, "Early Site Permit Review Preparedness," February 13, 1991. Even though this 20-year-plus policy was stated in guidance for Early Site Permits, it delineated issues which were to be resolved in the certification process from those resolved in the COLA process. Under neither would safety issues be postponed to the post-licensing construction period.

<sup>4</sup> SECY-11-0106, Final Rule: U.S. Advance Boiling-water reactor Aircraft Impact Design Certification Amendment (RIN 3150-AI84), August 4, 2011. Final rule approved November 1, 2011.

faced and their schedules must not take precedence over public health and safety.

When subsequent changes are needed to meet new safety mandates stemming from Fukushima and the other fundamental flaws pointed out in the earlier comments by the Oversight Group, the potential for major redesigns and changes during construction is overwhelming. This is unfair to the utility customers in Georgia, South Carolina and the other states where the AP1000 reactors are being considered, who, through advanced payment schemes in those states, will pay for potentially costly redesigns and change orders.

In conclusion, there are no compelling reasons or legal requirements for the Commission to certify the AP1000 reactor until the design issues are safely resolved.

THEREFORE, for the foregoing reasons, the Commission cannot certify the AP1000 reactor design and operating procedures without a complete and detailed analysis of the unresolved issues and unanswered safety questions with the AP1000 reactor design and operating procedures.

Respectfully submitted this 10<sup>th</sup> day of November 2011.

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