FOUNDATION FOR RESILIENT SOCIETIES

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Subject: Questions for the Joint Meeting of NRC and FERC on June 15

FERC Chairman Wellinghoff and Commissioners LaFleur, Moeller, and Norris; NRC Chairman Jaczko and Commissioners Apostolakis, Magwood, Ostendorff, and Svinicki:

We are writing in advance of the Joint Meeting of the Nuclear Regulatory Commission and the Federal Energy Regulatory Commission to be held on June 15, 2012.

The design of the current fleet of U.S. nuclear power plants was based on assumptions that the electric grid would be highly reliable, that outages would be of short duration, and that outages could be local but not regional or national in geographic scope. Forty years of subsequent operational experience and scientific study has shown these assumptions to be invalid. The widespread Northeast Blackout of 2003, as well as weather-related blackouts, have shown that outages can last for days or weeks and be regional in scope. The 1989 Hydro-Quebec Blackout and retrospective scientific studies have shown the potential for widespread blackout due to solar geomagnetic storms. Recently, it has become apparent that the U.S. electric grid could be vulnerable to cyber-attacks; if these attacks result in loss of critical equipment with long replacement times, widespread and long-term electric outage could result. Finally, increasing use of non-dispatchable wind and solar power, along with retirement of coal-fired generation plants, increase the chance of rolling blackouts due to unexpected events—so-called “single contingencies.”

Probabilistic studies and Severe Accident Mitigation Alternatives (SAMA) for nuclear plant licensing consistently show that the greatest risk to nuclear power plants comes from Loss of Outside Power (LOOP). Yet these studies and plans do not explicitly include the initiating events of severe solar storms or cyber-attack, or rolling blackouts due to shortage of dispatchable power. The events at Fukushima Dai-ichi in Japan amply show the consequences of extended LOOP and associated Station Blackout (SBO). Likewise, the 2003 Northeast Blackout caused an unprecedented nuclear safety event.

The NRC and FERC Commissioners should utilize the June 15 joint meeting to examine if the current regulatory system for electric grid reliability is sufficient to assure safe operation of nuclear power plants. In particular, we ask that these questions be addressed at the joint meeting:

- Twenty-three years after the Hydro-Quebec Blackout, the North American Electric Reliability Corporation (NERC) has not established a reliability standard for protection against solar geomagnetic storms. What effect would a widespread blackout due to solar storm have on nuclear power plants and associated spent fuel pools?

- Four years after FERC ordered enhanced cyber security standards for electric generation and transmission companies, multiple ballots to establish cyber security standards recently failed at NERC. What effect would a blackout caused by cyber-attack have on nuclear power plants?

- Rolling blackouts in Texas during February 2011 were partially due to inadequate reserve margins. Nonetheless, reserve margins for Texas (ERCOT) are still set lower than for other electric grid

interconnections. What effect would future rolling blackouts due to inadequate reserve margins in Texas have on safety for the South Texas and Comanche Peak nuclear power plants?

- Will retirement of coal-fired plants affect reserve margins and increase the likelihood of rolling blackouts? Do diesel generators at nuclear power plants have sufficient reliability to cope with increased incidence of rolling blackouts?

- How will greater proportions of non-dispatchable solar and wind generation affect electric grid reliability and nuclear safety?

- With increasing interdependence between electric generation and natural gas delivery, what studies has NERC conducted to examine the effect of gas-electric interdependence on blackout duration and blackstart operations? Could the duration of blackstart operations persist beyond the seven days of diesel generator fuel commonly stored on-site at nuclear power plants?

The answers to these and other questions may indicate that the self-regulatory system for electric grid reliability, dependent on voluntary action by NERC and its members, is simply inadequate for nuclear safety. Should this be demonstrated by testimony on June 15, we urge the NRC and FERC Commissioners to jointly recommend legislative and administrative enhancements to electric grid reliability and nuclear safety.

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