RESPONSE TO NRC STAFF ASSESSMENT (SECY-11-0137) of NTTF RECOMMENDATIONS

October 11, 2011

Christopher Paine

Director, Nuclear Program

Dr. Jordan Weaver, Project Scientist

Natural Resources Defense Council (NRDC)

Recommendations 2.1 and 2.3 – Seismic/Flooding

- The timeline (past and future) of GI-199 is questionable in terms of providing a timely resolution and informing near-term action.
- Does the NRC intend to use resolution of GI-199 as the vehicle for establishing criteria and methods to assess seismic safety deficiencies at specific licensee sites?
- We urge the NRC to not wait years for inspection criteria when it has already established methods and regulations for dealing with this exact issue in the context of early site permits and combined license reviews.
  - The staff recommendation in the latest SECY describes the preferred process of applying “present-day regulatory guidance and methodologies… to the reevaluation of flooding hazards at operating reactors” but did not go far enough in extending this common sense conclusion to seismic hazards.

Rec. 3 – Preventing or Mitigating seismically induced Fires and Floods

- This important issue was relegated to “Tier 3” status with no proposed schedule for consideration
- NRDC sees no valid reason for excluding seismically-induced fires and floods from the risk assessments and plant walk-downs contemplated under Recommendation 2.
- 2007 quake near Kashiwazaki-Kariwa NPP, the world’s largest, demonstrated serious knock-on fire and flood effects.

Recommendation 4 – SBO Coping

- Overall, we agree with the development of appropriate coping times through a tiered approach
- 4.25 year timetable for issuance of a final rule amending 10 CFR 50.63 is far too leisurely
- Only proposed “interim action” for SBO mitigation—better protection of existing EDMG equipment—would still be based on current insufficient design-basis criteria.

Commission Should Require Meaningful Near-Term Actions to Mitigate SBOs.

- Significantly longer on-site SBO coping capability for critical emergency core-cooling functions is commercially available NOW! Why wait?
- Consider ordering near-term acquisition of extended coping via: larger capacity DC battery backup; self-powered alternatives using residual heat removal steam; and robust portable power units.
- Why should Americans have to wait 4+ years for 8 hours of SBO coping capability when French citizens already enjoy 20 hours of extended coping at their PWR units?
- Numerous opportunities in BWRs for AC self-powering using RCIC, HPSI, and LPSI turbines.

Recommendation 5 – Hardened Vents

- We agree with addressing the need for reliable hardened vents in *both* BWR Mark I & II reactors
- Moreover, vent technology has progressed. Serious consideration should be given to requiring that these be hardened *FILTERED* vents, like those IMI Nuclear has installed at the Beznau PWR and Liebstadt BWR in Switzerland
- Some 90 reactors in Europe have some required form of filtered vent technology installed. Why has the NRC allowed the US to fall behind in this important area of accident mitigation?

Combustible Gas Control

- Dana Powers, ACRS
  "…how much information do I need to know about specifically Fukushima… We did it for Mark IIIs, why can't we do the same things for ones and twos. It's obvious that inerting is just not enough."
- The level of study and precaution taken in the US is dramatically less than that taken in other countries.
  – The NTTF "cliff-edge" effect for flooding seems equally applicable to hydrogen control.

Recommendation 7 – Spent Fuel Safety

- NRDC agrees that providing SFP instrumentation in accordance with 7.1 is a decent start, but SECY-11-0137 has muffled NTFF's clear call that this equipment be classified and regulated as "safety related."
- Staff memo calls only for "*reliable* SFP instrumentation" that is "*potentially* safety related."
- Staff massaging of 7.2-7.4 demotes NTTF recs for SFP makeup from a near-term priority for Commission orders to a "Tier 2" priority for eventual rulemaking
- Would kick out resolution and implementing action for at least 4 years, which we do not view as positive – BUT
- Both original NTTF Rec. and subsequent Staff analysis ignore safety advantages of off-loading densely packed spent fuel from vulnerable pools into better-protected dry casks
- NTFF/Staff artificially constrains problem of ensuring spent-fuel cooling to SFP makeup only
  - NRDC agrees with the safety concerns raised by UCS in their comments on NTTF Recommendations 7.2-7.5

Recommendation 8 – Emergency Response

- While agreeing with the NTTF's recommended orders, NRDC believes that their primary orientation toward rationalizing paperwork and "guidance" does not go nearly far enough in ensuring that NRC actually *accomplishes* its mission of *ensuring* that on-site emergency response capabilities *are adequate* to the task of protecting plant staff and the public and remain so on any given day decades into the future.
- We would prefer to see a more hands on role by the NRC in establishing hard and fast performance criteria for emergency response capabilities and realistic methods for verifying on a recurring basis that licensees are able to meet them.

Recommendation 8 (cont.)

- The SAMG voluntary initiative began necessary work but ended in some notable deficiencies, to which the industry has responded, “guidance is being developed.”
- The issuance of an order is clearly preferable and should not be a big hill to climb since at least some best practices should have already been gleaned from this initial attempt .

Rec. 8 – Emergency Response (cont.)

- **Neither NTTF recommendation nor Staff's evaluation clearly bites the bullet and brings *severe accident mitigation hardware features and operating procedures firmly within the ambit of NRC operating license requirements,* subject to NRC's continuing inspection and enforcement process.**
- **Would greatly simplify and expedite matters if Commission took this simple step, thereby making it clear to industry and the public that the era of non-binding, unaccountable self-regulation is over in the critical matter of on-site emergency responses.**
- **Never made sense in the first place to push these issues to the margins of the regulatory system. Makes even less sense now in the wake of Fukushima.**

Rec. 8 Emergency Response, cont.

- **Given severe natural or man-made events, or multiple equipment failures, could challenge one or more units in a population of 104 aging nuclear power plant *at any time*, Staff's proposal to engage in a yet another extended rulemaking would merely put us at the starting line for implementation in 4.25 years. This is unacceptable.**
- **The Commission should revert to the original Task Force recommendation for issuance of a near-term order on emergency response and strengthen it in the manner indicated above.**

Recommendation 9 – EP Enhancements

- NRDC agrees with original NTTF recommendation
  - These regulatory gaps are obvious in their importance following Fukushima and never should have been allowed to evolve in the first place
- Staff prioritization paper guts original NTTF recommendation and needlessly segments and "complexifies" it.
- Staff would prefer to delay consideration of Fukushima EP implications and work on implementing modest pre-existing EP reforms
- These took five years to issue. Will Commissioners allow post Fukushima EP enhancements to follow same leisurely track?

Other Emergency Preparedness Issues (Recommendations 10 and 11)

- Staff's prioritizes all remaining Task Force EP issues to an indeterminate "Third Tier."
- Indicative of difficulty NRC and industry have in facing-up to the risk of catastrophic consequences and the need to credibly reduce or mitigate their potential harm to exposed populations.
- NRDC believes there are serious emergency planning issues that the Task Force report and Staff review have completely overlooked:

Emergency Preparedness issues (cont)

- At what point, if ever, does the population and economic significance of an area at risk from a severe nuclear accident impose limits on the practical, financial, or moral efficacy of engaging in emergency preparedness planning.
- If there are such common sense limits, how should they find regulatory expression:
- –in an operating license condition for existing reactors that would compel closure when the population at risk exceeds a certain level within the maximum credible radius for a severe accident (e.g. the 17 million within 50 miles of Indian Point)?
-

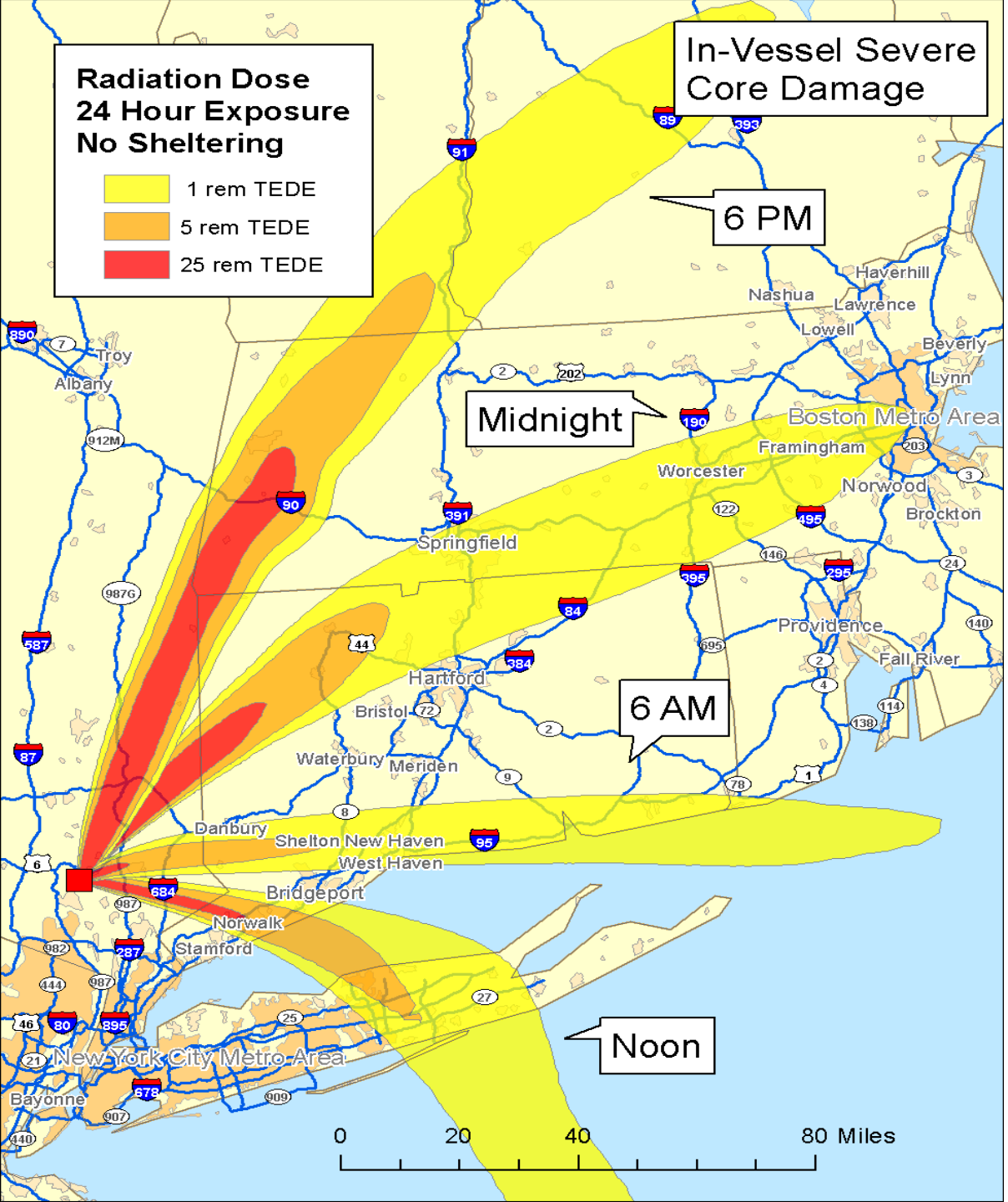

Figure 5: In-Vessel Severe Core Damage calculations using historical weather data for the month of October: four separate HPAC model runs showing the different plumes resulting from an accident at Indian Point Unit 3 occurring at different times of the day.

EP Issues (cont.)

- - in additional criteria for new reactors that would bar siting within an area of x radius around plant if it contains an aggregate population (or average population density) greater than y?
- - in a trigger level for “intolerable” financial damages to real property and economic activity that might be incurred in the event of a severe accident?
- - in new fuel and reactor safety design requirements for units sited in urban areas that significantly raise the barriers to or even *preclude* exposing the public to the radiological consequences of a major nuclear accident?

Recommendation 12

- **More fully include "defense-in-depth" activities in the Reactor Oversight Process (ROP) and enhance NRC staff training on Severe Accident Management Guidelines (SAMGs)**
- NRDC sees no justification or safety benefit to Staff's recommendation to defer NRC staff training on management of severe accidents and training of resident inspectors to monitor licensee implementation of currently voluntary SAMGs.
- The sooner the NRC takes seriously the need to regulate preparations for severe accident management, the better.
- Including current licensee SAMG activities within the ROP would create an inspection baseline to measure subsequent progress, or lack thereof, when and if stronger regulatory requirements are introduced, which is by no means certain.

Priorities

- While “staffing limitations” need to be considered, prioritization should not be expressly driven by resource concerns but rather by improving safety in areas that have the highest protection value.
- If necessary the Commission can seek more resources to accomplish the safety tasks it deems essential. Real, imagined, or self-imposed “staffing limitations” are a second-order concern.