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IN THE UNITED STATES COURT OF APPEALS  
FOR THE NINTH CIRCUIT

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PUBLIC CITIZEN, INC., and SAN LUIS OBISPO MOTHERS FOR PEACE,  
*Petitioners,*

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION, and  
THE UNITED STATES OF AMERICA,

*Respondents,*

and

NUCLEAR ENERGY INSTITUTE,

*Intervenor-Respondent.*

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THE STATE OF NEW YORK,

*Petitioner,*

v.

UNITED STATES NUCLEAR REGULATORY COMMISSION, and  
THE UNITED STATES OF AMERICA,

*Respondents.*

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ON PETITION FOR REVIEW OF FINAL ACTION  
OF THE UNITED STATES NUCLEAR REGULATORY COMMISSION

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**BRIEF OF PETITIONER STATE OF NEW YORK**

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## PRELIMINARY STATEMENT

The State of New York respectfully submits this brief in support of its petition seeking review of a final rule of the Nuclear Regulatory Commission ("NRC"). That rule defines the type of threat - the "design basis threat" or "DBT" - that nuclear facilities must be designed to withstand. Despite the events of September 11, 2001, which demonstrated that there is a serious threat of air-based terrorist attacks on nuclear power plants, the NRC has refused to add air-based threats to its DBT regulation. The NRC decided to exclude air-based threats because it believed that it was not "reasonable" to expect nuclear power plant licensees to protect against such threats and because the NRC believed that licensees could adequately protect the public by "mitigating" fires and explosions resulting from airborne attacks. The NRC's exclusion of air-based threats from the DBT rule allows nuclear power plant licensees to avoid responsibility for taking reasonable precautions against air attacks, such as installing passive physical barriers to defend their plants from such attacks.

The NRC's decision to exclude air attacks from the DBT rule is inconsistent with the Atomic Energy Act, the NRC's treatment of other similar threats, and the evidence before the agency. The NRC also violated the National Environmental Policy Act when it refused to study the environmental impacts of the generic rulemaking proceedings. The NRC's decision to exclude air-based threats from the final rule therefore should be vacated and the matter remanded

to the NRC for further proceedings.

#### JURISDICTIONAL STATEMENT

New York brings this action pursuant to the Hobbs Act, 28 U.S.C. § 2242(4), the Atomic Energy Act, 42 U.S.C. § 2239, and the Administrative Procedures Act, 5 U.S.C. § 702, seeking review of the NRC's final DBT rule amending 10 C.F.R. § 73.1. This Court has subject matter jurisdiction to enjoin, set aside, suspend, or determine the validity of all final orders of the NRC relating to the issuance or modification of rules and regulations dealing with the activities of licensees. 28 U.S.C. § 2342(4); 42 U.S.C. § 2239.

On July 23, 2004, the Committee to Bridge the Gap ("CBG") submitted to the NRC a petition for rulemaking, which asked the NRC to revise the DBT regulation to require owners to install passive protection systems to safeguard nuclear power plants from air attacks. See Petition for Rulemaking, In the Matter of Proposed Amendments to 10 C.F.R. Part 73 (Upgrading the Design Basis Threat Regulations for Protection Against Terrorist Attacks on Nuclear Reactors), NRC Proceeding No. PRM-73-12 (July 23, 2004) [hereinafter "CBG Petition"] (E 70-96).<sup>1</sup> On January 25, 2005, Attorneys General from seven states, including New York, filed

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<sup>1</sup> The citation to "E" refers to the Joint Excerpt of the Record filed by the petitioners in these combined proceedings.

written comments in support of the CBG Petition. The NRC ultimately combined the CBG Petition with an agency-initiated regulatory review (NRC Proceeding No. RIN 3150-AH60).

On March 19, 2007, the NRC published its final DBT rule, which modified the DBT rule in some respects but denied the request in the CBG Petition to include air-based threats. See Final Rule, Design Basis Threat, 72 Fed. Reg. 12,705 (Mar. 19, 2007) (E 1-23). The NRC's revisions to the DBT rule, denial of the CBG Petition, and refusal to include air-based threats within the DBT constituted a final order of the NRC. See 28 U.S.C. § 2344.

New York timely filed a Petition for Review with the Court of Appeals for the Second Circuit on May 14, 2007. New York's Petition for Review was subsequently transferred to this Court pursuant to 28 U.S.C. § 2112(a)(5) and consolidated with a Petition for Review of the NRC's final DBT rule filed in this Court by Public Citizen, Inc. and San Luis Obispo Mothers for Peace on May 11, 2007. Venue is proper under 28 U.S.C. § 2343 because New York maintains its principal offices within the jurisdiction of the Court of Appeals for the Second Circuit, where New York filed its Petition for Review prior to the transfer of venue.

## QUESTIONS PRESENTED

1. Did the NRC err in not requiring owners to protect plants from air-based threats, given that the NRC requires owners to protect their plants from similar water- and ground-based threats, and nuclear power plants are also vulnerable to air-based threats?

2. Did the NRC err in refusing to prepare an environmental impact statement for its DBT rulemaking, including its exclusion of air-based threats?

## STATEMENT OF THE CASE

### A. Factual and Legal Background

#### 1. Pre-9/11 Protection of Nuclear Power Plants

The Atomic Energy Act, 42 U.S.C. § 2011 et seq., requires the NRC to ensure that nuclear power plants are secure against sabotage and other deliberate attacks. In particular, the NRC must determine that the operation of a facility is "in accord with the common defense and security and will provide adequate protection to the health and safety of the public." 42 U.S.C. § 2232(a).

To fulfill its duty to ensure "adequate protection" of public health and safety, the NRC has promulgated the DBT regulation, 10 C.F.R. pt. 73. That regulation requires facility owners to establish and maintain a "physical protection system" and to design "safeguard systems" that guard against acts of radiological sabotage or theft of nuclear material. 10 C.F.R. § 73.1(a). It

sets forth the specific "design basis threats" – "general adversary characteristics" such as the number of attackers, weapons attackers may have, and vehicles attackers might use – that a facility owner must be prepared to defeat with high assurance. 72 Fed. Reg. at 12,705 (E 1).

The DBT regulation was first promulgated in 1977. Final Rule, Requirements for the Physical Protection of Nuclear Power Reactors, 42 Fed. Reg. 10,836 (Feb. 24, 1977) (E 999-1003). The original rule required power reactor licensees to protect against only three external attackers, working as a single group, moving on foot, and using hand-carried weapons, with the possible assistance of one insider. See *id.* at 10,838-39 (E 1001-02).

In 1991, CBG submitted a rulemaking petition requesting that the DBT rule be amended to include explosives-laden vehicles and a larger number of attackers. Notice of Receipt of Petition for Rulemaking, 56 Fed. Reg. 3,228 (Jan. 29, 1991) (E 1004-07). The NRC rejected the petition, concluding that any change in the DBTs was unwarranted because "the likelihood of nuclear terrorism involving the use of large truck bombs against nuclear power reactors is extremely low." Denial of Petition for Rulemaking, 56 Fed. Reg. 26,782, 26,785 (June 11, 1991) (E 154, 157). The NRC explained that it focuses on "realistic, not hypothetical, adversary characteristics," and that it "compares what has occurred or is credible to the attributes enumerated in the design basis

threats." Id. Although its threat assessment at that time revealed that it was not realistic to assume a truck bomb would be used in the United States, the NRC stated that it would "propose appropriate changes to the design based threat" if the "domestic threat environment [were to] change significantly." Id. at 26,785-86 (E 157-58).

Less than two years later, terrorists detonated explosives contained in a rented van in the underground garage of the World Trade Center in lower Manhattan. In the wake of the terrorists' proven capacity to use a truck bomb inside the United States, the NRC quickly revised the DBT rule to add protections against land-based vehicular bomb attacks. Final Rule, Protection Against Malevolent Use of Vehicles at Nuclear Power Plants, 59 Fed. Reg. 38,889 (Aug. 1, 1994) (E 165-76). According to the NRC, the World Trade Center bombing "represented a significant change to the domestic threat environment" that "eroded the basis for concluding that vehicle bombs could be excluded from any consideration of the domestic threat environment." Id. at 38,890 (E 166). As the NRC explained it, "[f]or the first time in the United States, a conspiracy with ties to Middle East extremists clearly demonstrated the capability and motivation to organize, plan, and successfully conduct a major vehicle bomb attack." Id.

It has long been known that an airborne attack on a nuclear power plant could be catastrophic. Nuclear power plants in the



United States, all of which were designed and built between the 1950s and 1980s, were not intended to withstand the impact of aircraft crashes or explosive forces. See 2/22/06 Comments of Nuclear Energy Institute to NRC in RIN 3150-AH60, at Enclosure 2, p. 10 (E 891); NRC: Nuclear Power Plants Not Protected Against Air Crashes, Associated Press (Mar. 28, 2002) (E 201-02); Director's Decision Under 10 CFR 2.206, at 12, In the Matter of All Nuclear Power Reactor Licensees, DD-02-04 (Nov. 1, 2002), available at <http://www.nrc.gov/reading-rm/doc-collections/petitions-2-206/directors-decision/2002/ml022890031.pdf>. A 1974 peer-reviewed study by a General Electric engineer, for example, concluded that if a plane weighing more than 12,500 pounds – a tiny fraction of the weight of today's commercial airliners<sup>2</sup> – were to hit a reactor building in the right place, it would likely breach the containment structure and damage the reactor core and cooling systems. Ian B. Wall, Probabilistic Assessment of Aircraft Risk for Nuclear Power Plants, 15 Nuclear Safety 276 (1974) [hereinafter GE Study] (E 97-105).

Researchers at the Argonne National Laboratory reached similar conclusions in a 1982 study conducted for the NRC. NRC, Evaluation

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<sup>2</sup> A fully loaded Boeing 767 weighs nearly 400,000 pounds. See Boeing, Technical Characteristics-Boeing 767-200ER, at [http://www.boeing.com/commercial/767family/pf/pf\\_200prod.html](http://www.boeing.com/commercial/767family/pf/pf_200prod.html). The A-380, Airbus's new superjumbo airliner, has a maximum takeoff weight of 1,235,000 pounds. See Airbus, Aircraft Families/A380 Specifications, at <http://www.airbus.com/en/aircraftfamilies/a380/a380/specifications.html>.

of Aircraft Crash Hazards Analyses for Nuclear Power Plants, NUREG/CR-2859 (1982) [hereinafter Argonne Study] (E 113-35). The report explained that "[n]umerous systems are required in order to provide reactor shutdown and adequate long-term cooling of the core. Although many of these safety-related systems are well protected within hardened structures (containment system, auxiliary building), some are not." Id. at 50 (E 125). Thus, an aircraft crash that caused "rapid depressurization of the plant's secondary cooling system" as well as loss of electrical power would likely set off an accident sequence resulting in "serious damage if not total meltdown" of the core. Id. at 51-52 (E 126-27).

The Argonne Study also determined that a Boeing 707 aircraft – slightly smaller than some of today's commercial aircraft – hitting a nuclear power plant could produce vibrations exceeding those experienced during an earthquake. See id. at 70 (E 130). This finding is significant because of a 1987 study commissioned by the NRC on the effects of earthquake forces on relays – electrical switches – at nuclear power plants. NRC, Relay Chatter & Operator Response After a Large Earthquake, NUREG/CR-4910 (1987) [hereinafter Relay Chatter Study] (E 136-53). This study demonstrated that the vibrations associated with an earthquake could cause the relays to switch from the opened to closed position, from the closed to the open position, or even to cycle back and forth between positions. The relay repositioning would

cause operating equipment to stop and standby equipment to start. The study concluded that if an earthquake were strong enough to cause loss of offsite power and relay chattering, core damage almost certainly would result. See id. at 6-5 (E 149). Thus, because an aircraft crashing into a nuclear plant structure produces vibrations similar to those of an earthquake, the crash would have a high likelihood of causing reactor core damage – even without considering the effect of fires, explosions, or penetration of the aircraft through the containment structure.

Other studies conducted by or for the NRC prior to September 11, 2001 also concluded that an aircraft hitting a nuclear power plant could cause a reactor meltdown, damage spent fuel pools, and lead to the release of radiation. A study of safety at the Indian Point Energy Center in New York, for example, determined that a core meltdown could occur if either of the control buildings at the Indian Point nuclear power plant were hit by even a light aircraft. Power Auth. of the State of N.Y. & Consol. Edison Co., Indian Point Probabilistic Safety Study, at 7.6-3 to 7.6-6 (1982) (E 109-12). And an NRC study of spent fuel pools at decommissioning nuclear power plants, the final results of which the NRC published in 2001, concluded that aircraft damage could affect the structural integrity of spent fuel pools – which contain highly radioactive uranium and plutonium and are located outside the reactor's protective containment shells – or the availability of nearby

support systems. NRC, Technical Study of Spent Fuel Pool Accident Risk at Decommissioning Nuclear Power Plants, NUREG-1738, at § 3.5.2 (2001) [hereinafter 2001 NRC Spent Fuel Pool Study] (E 187-88). The NRC further found that one of two crashes would damage the spent fuel pool enough to uncover the stored fuel, which could lead to serious consequences from a zirconium cladding fire. See id.

Despite the risks posed by an aircraft crash, the NRC's DBT regulation did not require nuclear power plants to develop protections against airborne attacks prior to the events of September 11, 2001. The NRC found the risks acceptable because of the low probability that an aircraft would accidentally hit a nuclear power plant. See, e.g., Indian Point Probabilistic Safety Study, supra, at 7.6-6 (E 112) (concluding that the probability of an accidental crash was sufficiently low as to "present no significant hazard"). The NRC did not consider - or considered it extremely unlikely - that anyone would deliberately crash an airplane into a nuclear power plant.

## **2. September 11, 2001, and Its Aftermath**

On September 11, 2001, terrorists hijacked four jet airliners and crashed three of them into their intended targets. The impact of the fuel-laden planes caused explosions and large, long-lasting fires. Those explosions and fires destroyed a portion of the

Pentagon in northern Virginia and caused the collapse of the World Trade Center towers and nearby buildings in New York City. See Nat'l Comm'n on Terrorist Attacks Upon the U.S. ("9/11 Commission"), The 9/11 Commission Report (2004) (E 264).

Two of the hijacked planes flew near or over Indian Point, a nuclear power plant located on the Hudson River twenty-four miles north of New York City. See id. at 32 (E 300). The wind direction at the time of the attacks was towards the southeast – that is, from Indian Point towards New York City. See id. at 285 (E 316-A). Extrapolating from 2000 census information, more than seventeen million people live within fifty miles of the Indian Point reactors and spent fuel pools. See Edwin Lyman, Chernobyl on the Hudson? The Health & Economic Impacts of a Terrorist Attack at the Indian Point Nuclear Plant 23 (2004) (E 387).

The 9/11 Commission's report revealed that Khalid Sheikh Mohammad, the mastermind of the 9/11 attacks, originally planned to hijack additional aircraft to crash into targets on both coasts, including nuclear power plants. The 9/11 Commission Report, at 154 (E 304). As late as July 2001, the terrorists were considering attacking a specific nuclear facility in New York, which one of the pilots "had seen during familiarization flights near New York." Id. at 245 (E 308). This was most likely Indian Point.

In the years since 9/11, the federal government has repeatedly acknowledged that there is a credible threat of intentional attacks

on nuclear power plants, including the specific threat of an aircraft attack. For instance:

- On January 23, 2002, the NRC issued an alert to the nation's nuclear power plants warning of the potential for an attack by terrorists who planned to crash a hijacked airliner into a nuclear facility. Kenneth R. Bazinet & Richard Sisk, Plant Attacks Feared, N.Y. Daily News (Feb. 1, 2002), at 5, available at 2002 WL 3165383.
- In his 2002 State of the Union address, President Bush stated that "diagrams of American nuclear power plants" had been found in Afghanistan, suggesting that Al-Qaeda may have been planning attacks on those facilities. The President's State of the Union Address (Jan. 29, 2002), available at <http://www.whitehouse.gov/news/releases/2002/01/20020129-11.html>.
- On May 14, 2002, Gordon Johndroe, a spokesman for the Office of Homeland Security, noted that "we know that Al-Qaeda has been gathering information and looking at nuclear facilities and other critical infrastructure as potential targets." Bill Gertz, Security Boosted at Nuke Facilities, Wash. Times (May 14, 2002), available at <http://www.ohiocitizen.org/campaigns/electric/pre2003/boosted.htm>.
- On May 24, 2002, the NRC reported that the nation's nuclear power plants had been placed on heightened alert as a result of information gained by the intelligence community. Wide-Ranging New Terror Alerts, CBS News.com (May 26, 2002), available at <http://www.cbsnews.com/stories/2002/05/24/attack/main510054.shtml>.
- On November 15, 2002, the FBI sent a bulletin to law enforcement agencies, warning them that Al-Qaeda's "highest priority targets remain within the aviation, petroleum, and nuclear sectors." Text of FBI Terror Warning, CBSNews.com (Nov. 15, 2002), available at <http://www.cbsnews.com/stories/2002/11/15/attack/main529501.shtml>.

- On May 1, 2003, the FBI issued a Threat Communication warning the nuclear plant operators to remain vigilant about suspicious activity that could signal a potential terrorist attack. FBI Warns of Nuke Plant Danger, CBS News.com (May 1, 2003), available at <http://www.cbsnews.com/stories/2003/09/04/attack/main571556.shtml>.
- On September 4, 2003, the United States General Accounting Office ("GAO") issued a report noting that the nation's commercial nuclear power plants are possible terrorist targets and criticizing the NRC's oversight and regulation of nuclear power plant security. GAO, Nuclear Regulatory Commission: Oversight of Security at Commercial Nuclear Power Plants Needs to Be Strengthened, GAO-03-752 (2003) (E 241-57); see also GAO, Testimony Before the Subcomm. on Nat'l Security, Emerging Threats, & Int'l Relations, House Comm. on Gov't Reform, Nuclear Power Plants Have Upgraded Security, But the NRC Needs to Improve Its Process for Revising the DBT, GAO-06-555T, at 1 (2006) [hereinafter "2006 GAO Testimony"] (E 964) (stating that, "[a]ccording to the [NRC] . . . , there continues to be a general credible threat of a terrorist attack on the nation's commercial nuclear power plants, in particular by al Qaeda and like-minded Islamic terrorist groups").
- On July 1, 2004, the FBI issued a bulletin to 18,000 law enforcement agencies nationwide warning that recent intelligence continued to show al-Qaeda's interest in attacking a range of facilities, including nuclear plants. FBI's 4th Warning, CBSNews.com (July 2, 2004), available at <http://www.cbsnews.com/stories/2004/07/08/national/printable628204.shtml>.

The Federal Emergency Management Agency, another federal agency responsible for assessing terrorist threats and for assuring the safety and security of the public, has taken actions signifying that it considers an aircraft attack on a nuclear power plant to be a credible threat. For instance, during a June 2004 exercise to

assess emergency preparedness at Indian Point, the agency simulated a suicide attack by a large cargo jet. Fed. Emergency Mgmt. Agency, Final Exercise Report: Indian Point Energy Center at 101-02 (Oct. 25, 2004) (E 341-42).

Post-9/11 scientific studies confirm that nuclear plants remain vulnerable to airborne attacks that could have catastrophic results. In 2005, the National Academy of Sciences released a report from a study it conducted at the request of Congress, with the sponsorship of the NRC and the Department of Homeland Security, of the security risks posed by the storage of spent fuel at nuclear plant sites. See Nat'l Acad. of Scis., Safety and Security of Commercial Spent Nuclear Fuel Storage: Public Report (2006) [hereinafter NAS Study] (E 725-846). Based upon information provided by the NRC, the National Academy of Sciences judged that "attacks with civilian aircraft remain a credible threat." Id. at 30 (E 760). It noted that terrorists might choose to attack spent fuel pools because they are "less well protected structurally than reactor cores" and "typically contain inventories of medium- and long-lived radionuclides that are several times greater than those contained in individual reactor cores." Id. at 36 (E 766). The National Academy of Sciences concluded that the storage pools are susceptible to fire and radiological release from a wide range of conditions, including intentional attacks with large civilian aircraft. Id. at 49, 57 (E 779, 787). Similarly, the German



Reactor Safety Organization, a scientific-technical research group that works primarily for nuclear regulators in Germany, found that large jetliners crashing into nuclear facilities under a variety of scenarios could cause uncontrollable situations and the release of radiation. German Reactor Safety Org., Protection of German Nuclear Power Plants Against the Background of the Terrorist Attacks in the U.S. on Sept. 11, 2001 (Nov. 27, 2002) [hereinafter GRS Study], translation available at <http://www.greenpeace.org/raw/content/international/press/reports/protection-of-german-nuclear-p.2.pdf>.

The terrorist attacks of 9/11 caused nearly 3,000 deaths. The 9/11 Commission Report, at 311 (E 316-B). In comparison, a 2004 study by the Union of Concerned Scientists concluded that a major release of radiation from the Indian Point nuclear power plant could kill as many as 44,000 people within a week and more than 500,000 people over time. See Lyman, supra, at 23 (E 387).

**B. The NRC's Refusal to Add Air-Based Threats to the DBT regulation**

Following the attacks of 9/11, the NRC's regulation of security at nuclear facilities came under intense public scrutiny. In 2003, without notice or opportunity for public comment, the NRC issued three orders revising the DBTs for nuclear power reactors (the "DBT Orders"). All Operating Power Reactor Licensees; Order Modifying Licenses (Effective Immediately), 68 Fed. Reg. 24,517

(May 7, 2003) (E 212-36). The DBT Orders stated that they "supercede[] the DBT specified in 10 C.F.R. § 73.1."<sup>3</sup> Id. at 24,518 (E 213). While the details of the revised DBTs were not revealed publicly, they did not include air-based threats. See CBG Petition at 17 (E 86).

A report by the GAO later revealed that, before issuing the DBT Orders, NRC staff "solicited feedback from the nuclear industry on what was reasonable for a private security force to defend against and the cost and time frame for implementing security measures to defend against specific adversary characteristics." 2006 GAO Testimony at 9 (E 968-D) (referencing GAO, Report to the Chairman, Subcomm. on Nat'l Security, Emerging Threats & Int'l Relations, House Comm. on Gov't Reform, Efforts Made to Upgrade Security, But the Nuclear Regulatory Commission's Design Basis Threat Process Should Be Improved, GAO-06-388 (2006) (E 939-61)). NRC staff made changes to the recommended DBT in response to objections made by the Nuclear Energy Institute ("NEI"), which represents the nuclear power industry. See id. at 10 (E 968-E). The GAO also found that the NRC commissioners themselves made significant changes to the revised DBT based on "their policy

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<sup>3</sup> When the orders were challenged, the NRC repudiated that position: "Contrary to any suggestion arising from inartful language in the orders themselves saying that they 'supersede' NRC regulations, the NRC's 2003 orders do not in fact amend or modify NRC regulations." Brief for the Federal Respondents at 20, Public Citizen v. NRC, D.C. Circuit No. 03-1181 (Apr. 14, 2004) (E 260); see also id. at 47 (E 261).

judgments on what is reasonable for a private security force to defend against." Id. at 3 (E 966). Different commissioners used differing criteria, such as "cost or practicality of defensive measures," in deciding to remove certain adversary characteristics. Id. at 4 (E 967).

The 2003 DBT Orders were challenged in the D.C. Circuit on procedural and substantive grounds. See Petition for Review, Public Citizen v. NRC, D.C. Cir. No. 03-1181 (June 30, 2003) (E 239-40). After the NRC informed the court that it intended to commence a formal rulemaking proceeding revising the DBTs (E 324-30), the D.C. Circuit issued an order holding the case in abeyance. Order, Public Citizen v. NRC, D.C. Cir. No. 03-1181 (Sept. 17, 2004) (Circuit Judges Ginsburg, Randolph, Rogers) (E 331).

The NRC commenced that rulemaking in response to a 2004 administrative petition filed by CBG. See Petition for Rulemaking; Notice of Receipt, 69 Fed. Reg. 64,690 (Nov. 8, 2004) (E 343-45). The petition requested that the NRC amend its DBT regulations to protect against the terrorist capabilities evidenced by the attacks of 9/11, including air attacks. It referenced the 2002 GRS Study, which concluded that reactors could not withstand impacts from large commercial aircraft like those that occurred on 9/11. See CBG Petition at 25 (E 94). The petition also discussed findings by the 9/11 Commission and articles in the Bulletin of Atomic Scientists regarding the growing threat of nuclear terrorism, and

an analysis prepared by the Union of Concerned Scientists ("UCS") regarding the vulnerability of spent fuel pools to air attack. See id. at 2-18, 25 (E 71-87, 94).

The CBG Petition asked the NRC to require nuclear power plant licensees to construct passive barriers against air attacks so that the plants would be able to withstand an attack from a fully loaded jet. See id. at 24-26 (E 93-95). The petition requested that the NRC consider requiring the installation of an external network of steel I-beams, cables, or mesh, all of which CBG collectively included within the shorthand phrase "beamhenges." See id. at 25 (E 94); see also Daniel Hirsh, et al., NRC's Dirty Little Secret: The Nuclear Regulatory Commission Is Still Unwilling to Respond to Serious Security Issues, Bulletin of the Atomic Scientists, at 46-47 (May/June 2003) (E 205-06). These structural defenses would shield the reactors, spent fuel pools, and critical support buildings and would significantly reduce the penetration power of an attacking aircraft and the associated fire and explosion hazards.<sup>4</sup> CBG estimated that the cost of such a barrier would be minimal compared to the initial construction costs for the power plant. See CBG Petition at 26 (E 95).

In early 2005, the Attorneys General of New York, Arizona, California, Illinois, Connecticut, Wisconsin, and Arkansas filed

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<sup>4</sup> The beamhenge concept is illustrated by an animated clip submitted by CBG to the NRC and also available on the internet at <http://www.committeetobridgethegap.org/beamhenge.html>.

joint written comments in support of the CBG Petition. See 1/24/05 Comments of Attorneys General to NRC in PRM-73-12 (E 429-38). The Attorneys General requested that the NRC revise the DBT rule to recognize air-based and water-based attacks as threats to nuclear plants. See id. at 4 (E 434). Other commenters also referenced studies and reports indicating that nuclear power plants and spent fuel pools cannot withstand aircraft impacts. See, e.g., 1/24/05 Comments of UCS to NRC in PRM-73-12 (attaching Lyman, supra) (E 353-418); 1/24/05 Comments of Greenpeace to NRC in PRM-73-12 (referencing Argonne Study) (E 419-21); 1/24/05 Comments of Nuclear Information & Resource Serv. ("NIRS") in PRM-73-12, at 1 & 4 (referencing 2001 NRC Spent Fuel Pool Study) (E 422-28).

In June 2005, the NRC staff concluded that the NRC should reject the petition – because, among other things, the danger from a targeted aircraft attack was “low” – and prepared decisional documents for the Commissioners denying CBG’s request. (E 474, 480-81). According to publicly available Commission voting records, by late July, three of the five Commissioners had agreed to reject CBG’s petition. (E 630-32 - McGaffigan); (E 642-43 - Merrifield); (E 694-95 - Lyons).

Before the NRC took final action, however, Congress passed, and the President signed into law, the Energy Policy Act of 2005, Pub. L. No. 109-58. The legislation included provisions concerning nuclear power plant security. 42 U.S.C. § 2210e. Prompted by

concerns regarding the pace and substance of the NRC's response to the threat of terrorist attacks on nuclear power plants, the legislation required the NRC to revise the DBT rule. 42 U.S.C. § 2210e(a); see also 1/25/05 Comments of Rep. Markey to NRC in PRM-72-12 (E 439). Congress specifically directed that the NRC "shall" consider, among other things, "the events of September 11, 2001," "suicide attacks," "the potential for water-based and air-based threats," "the potential use of explosive devices of considerable size," and "large fires of long duration." 42 U.S.C. § 2210e(b)(1), (5), (6), (7) & (9). In view of the new law, the NRC decided to defer, rather than deny, CBG's petition. See 10/27/05 Memorandum from Vietti-Cook to Reyes, at ¶¶ 23 & 29 (E 699, 700); 11/3/05 Letter from Vietti-Cook to Hirsch (E 714-15).

In 2005, the NRC published for public comment its proposed amendments to the DBT rules. See 70 Fed. Reg. 67,380 (Nov. 7, 2005) (E 716-24). The NRC's stated objectives in issuing the proposed rule were to "make generically applicable the security requirements previously imposed by the Commission's April 29, 2003 DBT Orders, and to define in NRC regulations the level of security necessary to ensure adequate protection of the public health and safety and common defense and security." Id. at 67,381 (E 717). The NRC stated that, as directed by Congress in the Energy Policy Act, it would consider twelve factors as part of the rulemaking, including the potential for air-based threats. See id. But the

NRC determined not to include air-based threats in the proposed DBT rule, see id. at 67,382 (E 718), and to "defer" action on CBG's request, see id. at 67,385 (E 721). The NRC concluded that the proposed "DBT is based upon . . . a determination as to the attacks against which a private security force could reasonably be expected to defend against." Id.

After publishing its proposed rule, the NRC received a second round of public comments. The "vast majority" of the 920 comments that the NRC received supported inclusion of airborne threats in the DBT rule. 72 Fed. Reg. at 12,706, 12,710 (E 2, 6). More than 800 comments specifically requested that the NRC consider the "beamhenges" concept, or a similar passive barrier method of protection against airborne attacks, initially proposed in the CBG Petition. See id. at 12,711 (E 7). Several comments specifically mentioned studies demonstrating the vulnerability of nuclear power reactors and spent fuel pools to aircraft attacks, including the GE Study, the Argonne Study, the 2001 NRC Spent Fuel Pool Study, the GRS Study, and the NAS Study. See, e.g., 2/21/06 Comments from CIECP to NRC in RIN 3150-AH60, at Appendix A (E 868-69). Even NEI's comments – despite opposing inclusion of airborne threats in the DBT rule – acknowledged that nuclear power plants were not designed to withstand the impact of a large commercial airliner. See 2/22/06 Comments of NEI to NRC in RIN 3150-AH60, at Enclosure 2, p. 10 (E 891).

On March 19, 2007, the NRC issued its final rule amending the DBT regulation. 72 Fed. Reg. 12,705 (E 1-23). The NRC revised the DBTs to add waterborne attacks and cyber attacks and to increase the maximum attack force size to an undisclosed number. In the notice of final rule, the NRC stated that these changes were "necessary to ensure that the public health and safety and common defense and security are adequately protected in the current, post-September 11, 2001, environment." Id. at 12,717 (E 13).

Nonetheless, the NRC excluded airborne attacks from the final DBT rule and rejected imposing any specific passive physical security measures to protect against air-based attacks, such as beamhenges. The NRC provided two explanations for excluding the threat of airborne attack from the DBTs: (1) airborne threats are "beyond what a private security force can reasonably be expected to defend against"; and (2) the NRC has directed licensees to implement certain unspecified "mitigative measures to limit the effects of an aircraft strike," which the NRC believes are sufficient to ensure adequate protection of the public health and safety. 72 Fed. Reg. at 12,710-11 (E 6-7). The reference to "mitigative measures" apparently refers to a February 2002 directive, 67 Fed. Reg. 9,792 (Mar. 4, 2002) (E 177-88), requiring licensees to identify "mitigative strategies" to reduce the potential consequences of "the loss of areas of [a] plant due to explosions or fire," including those that an aircraft impact might



create, that licensees could implement using already "existing or readily available resources."<sup>5</sup> In support of the second rationale, the NRC made passing reference to undisclosed site-specific engineering studies it conducted of a "limited number" of plants. 72 Fed. Reg. at 12,710 (E 6). The NRC claimed that these studies showed both: (1) a low likelihood that a successful commercial aircraft attack would both damage the reactor core and release radioactivity that could affect public health and safety; and (2) that even in the event of such a release, there would be time to implement required on-site mitigation actions and off-site emergency plans. See id. As the NRC's secretary clarified, mitigation measures "will be at the back end once the attack occurs." Homeland Security: Monitoring Nuclear Power Plant Security: Hearing Before the Subcomm. on Nat'l Security, Emerging Threats and Int'l Relations, House Comm. on Gov't Reform, 108th Cong. 61 (2004) (statement of Luis Reyes, Executive Dir. of

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<sup>5</sup> Although this portion of the February 2002 order is not public, various public NRC documents have quoted or discussed it. See, e.g., 7/11/07 Letter from Boska, NRC, to Balduzzi, Entergy Nuclear Operations, re: Incorporation of Mitigation Strategies Required by Section B.5.b. of Commission Order EA-02-026 (attaching Safety Evaluation by the NRC Related to Order No. EA-02-026 Entergy Nuclear Operations, Inc. Indian Point Nuclear Generating Unit Nos. 2 & 3), available at [http://adamwebsearch2.nrc.gov/idmws/doccontent.dll?library=PU\\_ADAMS^PBNTAD01&ID=072000053](http://adamwebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS^PBNTAD01&ID=072000053); see also 7/26/07 Letter from Kalyanam, NRC, to Rosenblum, Southern California Education Company, San Onofre Nuclear Generating Station, re: Incorporation of Mitigation Strategies required by Section B.5.b of Commission Order EA-02-026, available at [http://adamwebsearch2.nrc.gov/idmws/doccontent.dll?library=PU\\_ADAMS^PBNTAD01&ID=072150097](http://adamwebsearch2.nrc.gov/idmws/doccontent.dll?library=PU_ADAMS^PBNTAD01&ID=072150097).

Operations, NRC), available at [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108\\_house\\_hearings&docid=f:98358.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_house_hearings&docid=f:98358.pdf).

To accompany the proposed DBT rule, the NRC prepared an environmental assessment ("EA"), as required by the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 et seq. The EA concluded that the proposed revisions to the DBT would not cause any significant environmental impacts because the rule change would not impose any new requirements beyond those already imposed through the 2003 DBT Orders that were currently in place. NRC, EA Supporting Proposed Rule, 10 CFR Part 73.1 - Design Basis Threat at vi (Nov. 2005) (E 704-13); NRC, EA Supporting Final Rule 10 CFR Part 73.1 - Design Basis Threat (Feb. 2007) [hereinafter Final EA] (E 59-69).

#### **SUMMARY OF THE ARGUMENT**

1. Neither of the reasons that the NRC offered for excluding air-based threats from the DBT rule is adequate. The NRC's consideration of whether it would be "reasonable" to expect a nuclear power plant to defend against a threat is unprecedented, and the NRC offered no explanation for departing from its past practices. Nor is there any basis here to conclude that it would be unreasonable for plants to take defensive measures against air attacks. To the extent it thought it would not be feasible for plants to defend themselves because it would require them to use

military weapons, the NRC misunderstood the petition and comments in support, which primarily sought passive defensive structures such as beamhenges. To the extent it thought it would be too expensive for plants to take defensive measures, the NRC – by its own admission – violated the Atomic Energy Act, which requires adequate protection of public health and safety regardless of cost.

Nor could the NRC exclude airborne threats based on nuclear power plants' plans to contain large fires. Its conclusion that those after-the-fact contingency plans provide an adequate level of protection from air attacks is inconsistent with its conclusion that the same plans are not adequate against land- or water-based attacks, such as vehicular bombs, for which the NRC requires nuclear power plant licensees to erect and maintain physical barriers. The conclusion also conflicts with the evidence before the NRC that nuclear reactors and spent-fuel pools are vulnerable to air attacks.

2. The NRC violated NEPA by failing to prepare an environmental impact statement studying the effects of its rulemaking, including its failure to add air-based threats to the DBT rule. The rulemaking bears directly on the chances of a successful terrorist attack on a nuclear power plant. And this Court has already held that NEPA requires the NRC to study how its actions affect the risk of terrorism. See San Luis Obispo Mothers for Peace v. NRC, 449 F.3d 1016 (9th Cir. 2006), cert. denied, 127

S. Ct. 1124 (2007). The NRC therefore should have prepared an environmental impact statement.

## ARGUMENT

### POINT I

#### THE NRC'S FAILURE TO INCLUDE AIRBORNE THREATS IN THE DBT RULE IS ARBITRARY AND CAPRICIOUS

Under the Administrative Procedure Act, a reviewing court may set aside an agency rule that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). A court must determine whether the agency examined relevant data and articulated a satisfactory explanation for its action, including a "rational connection between the facts found and the choice made." Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983). An agency rule is arbitrary and capricious if the agency has "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." Id.

Further, while an agency's interpretation of a statute it administers generally merits some deference, "[a]n agency interpretation of a relevant provision which conflicts with the agency's earlier interpretation is entitled to considerably less

deference." INS v. Cardoza-Fonseca, 480 U.S. 421, 446 n.30 (1987); see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv., 481 F.3d 1224, 1234 (9th Cir. 2007). Rather, "an agency changing its course must supply a reasoned analysis indicating that prior policies and standards are being deliberately changed, not casually ignored, and if an agency glosses over or swerves from prior precedents without discussion it may cross the line from the tolerably terse to the intolerably mute." N.W. Env'tl. Def. Ctr. v. Bonneville Power Admin., 477 F.3d 668, 687-88 (9th Cir. 2007) (citations omitted). When an agency departs from prior standards, the reviewing court should carefully consider the consistency of the change with the agency's mandate. See W. States Petroleum Ass'n v. Wash. Dep't of Ecology, 87 F.3d 280, 285 (9th Cir. 1996).

The Atomic Energy Act requires the NRC to ensure that the operation of nuclear power plants provides for "adequate protection" of public health and safety. 42 U.S.C. § 2232(a). This standard is "narrow, focusing solely on health and safety considerations." Union of Concerned Scientists v. NRC, 824 F.2d 108, 114 (D.C. Cir. 1987). In deciding what level of protection is adequate, the NRC may not consider factors unrelated to health and safety, such as the economic costs of protective measures or the benefits provided by an otherwise unduly risky activity. See id. at 117.

The NRC does not dispute that – especially in view of the events of September 11, 2001 – there is a real possibility of an air attack on a nuclear power plant. The NRC refused to require plants to protect against airborne threats, however, because it would not be “reasonable” to expect a plant’s “private security force” to defend against air attacks and because the plants are prepared to mitigate the damage caused by a large fire or explosion. 72 Fed. Reg. at 12,725 (E 21). Neither consideration is a valid basis to exclude airborne threats from the DBT regulation.

**A. The Reasonable-Expectation Standard Conflicts with the NRC’s Prior Actions and the Atomic Energy Act.**

The NRC effectively concluded that even if adequate protection for nuclear power plants includes defenses against air attacks, plants need not adopt any such measures because it would not be reasonable to expect them to do so. This reasonable-expectation standard does not appear in the Atomic Energy Act, the Energy Policy Act of 2005, or the NRC’s DBT regulation. There are at least two fatal problems with the NRC’s conclusion that it is not reasonable to expect plants to defend against air attacks. First, the NRC’s standard is inconsistent with the agency’s past approach to the DBTs, and the agency has not provided a reasoned explanation for changing course. Second, the NRC based its conclusion on factors that either do not support its conclusion here, such as

feasibility, or are prohibited by statute, such as cost.

1. **The NRC's rationale conflicts with its prior approach to the DBT regulation.**

The NRC's justification for excluding air-based threats from the revised DBT rule is at odds with the agency's previous approach to defining the DBTs. The NRC's prior approach focused not on whether it would be "reasonable" to expect a plant to defend against the threat, but on its assessment of the domestic threat environment and whether there was a credible threat that a specific adversary characteristic would be used against a nuclear power plant.

The NRC's previous approach to defining the DBTs is exemplified by the NRC's denial in 1991 of a petition seeking inclusion of large truck bombs in the DBT rule; its subsequent revision to the DBT rule in 1994 to include such a threat after the 1993 vehicle bomb attack on the World Trade Center; and its addition of waterborne bomb attacks and cyber attacks in the recent rule revision. See 59 Fed. Reg. at 38,892 (E 168); 56 Fed. Reg. at 26,785 (E 157); 72 Fed. Reg. at 12,710-11, 12,722 (E 6-7, 18). In deciding whether to include a particular adversary characteristic in the DBT rule, the NRC looked at whether the characteristic — such as weaponry, group size, tactics, explosives, explosive delivery devices, and targets — had been "used in the past" and whether its use could "reasonably be expected to continue to occur

in the future." 59 Fed. Reg. at 38,892 (E 168); see also 56 Fed. Reg. at 26,785 (E 157).

If the NRC's review of historical intelligence data indicated a significant change in the domestic threat environment, such as occurred after the 1993 World Trade Center bombing, then the NRC proposed an appropriate change to the DBT rule. See 59 Fed. Reg. at 38,891 (E 167); see also 72 Fed. Reg. at 12,710-11 (E 6-7). Only when the NRC determined that the likelihood of nuclear terrorism using a particular adversary characteristic was very low, as the NRC determined in 1991 with regard to vehicular bomb threats, would the NRC decline to include it in the DBT regulation. See 56 Fed. Reg. at 26,784 (E 156).

When it decided to exclude air-based attacks from the DBT rule, the NRC deviated from this historic practice. The NRC did not conclude that there is no credible threat of an airborne attack on a nuclear power plant. On the contrary, since 9/11, the NRC — like other federal agencies responsible for protecting the public from terrorist attacks — has repeatedly acknowledged just such a threat. See supra at 11-14. And the NRC has tried to determine the capabilities of licensees and various federal agencies to respond to such an attack. See, e.g., 72 Fed. Reg. at 12,710 (E 6). In particular, the NRC has directed plant owners to identify "readily available resources" that could respond to "explosions or fire, including those that an aircraft impact might create." See



supra at 23 n.5.

Instead, the NRC injected an entirely new criteria – whether it would be reasonable to expect a private security force to defend against the threat – that applies just to air-based threats. The NRC has never before used this standard in a rulemaking proceeding to determine whether to include or exclude a particular threat from the DBT rule. It has never considered, as it did here, whether some other federal agency might be responsible for dealing with the threat. Other federal agencies presumably have some jurisdiction over various aspects of water-based threats (e.g., Coast Guard), vehicle-based threats (e.g., FBI), or cyber-based threats (e.g., Secret Service Electronic Crimes Task Force), yet the NRC included those threats within its DBT regulation. See 10 C.F.R. § 73.1. The NRC offered no reason for reaching a different conclusion with respect to air-based threats.

The only prior exception the NRC has made to a purely risk-based approach has been pursuant to its “enemy of the state” rule, which provides that licensees need not protect against threats from military attacks. See 10 C.F.R. § 50.13.<sup>6</sup> According to the NRC,

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<sup>6</sup> The rule provides as follows:

An applicant for a license to construct and operate a production or utilization facility, or for an amendment to such license, is not required to provide for design features or other measures for the specific purpose of protecting against the effects of (a) attacks and destructive acts, including sabotage,

this provision – which was adopted because of concerns in the 1960s about a Cuban attack on Florida – was “primarily intended to make clear that privately-owned nuclear facilities were not responsible for defending against attacks that typically could only be carried out by foreign military organizations.” 72 Fed. Reg. at 12,714 (E 10). Here, however, the NRC rejected the enemy-of-the-state rule as the basis for excluding air-based threats from the revised DBTs. See id. The NRC therefore cannot rely on it for its wholesale exclusion of air attacks from the DBT regulation.

Because the NRC departed from its prior approach to formulating the DBT, the NRC was required to “clearly set forth the ground for its departure from prior norms so that [the Court] may understand the basis of the [NRC’s] action and judge the consistency of that action with the [NRC’s] mandate,” W. States Petroleum Ass’n, 87 F.3d at 285. The NRC made no attempt to explain its departure from prior practice, and the Court “may not supply a reasoned basis for the agency’s action that the agency itself has not given,” Bowman Transp., Inc. v. Ark.-Best Freight Sys., 419 U.S. 281, 285-86 (1974). This Court need not defer to the NRC’s new interpretation of the DBT rule in conflict with its

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directed against the facility by an enemy of the United States, whether a foreign government or other person, or (b) use or deployment of weapons incident to U.S. defense activities.

10 C.F.R. § 50.13.

prior interpretation. See Nat'l Wildlife Fed'n, 481 F.3d at 1234. The NRC's failure to provide any reasoned analysis for its change in approach is sufficient grounds for rejecting the NRC's final rule as arbitrary and capricious. See N.W. Env'tl. Def. Ctr., 477 F.3d at 687-88.

**2. The factors that the NRC considered are unlawful or irrelevant.**

It is difficult to discern precisely why the NRC thought it unreasonable to expect a nuclear power plant to take any protective measures against airborne threats. Despite receiving several comments in the DBT rulemaking proceedings asking the NRC to clarify its standard, the NRC never explained what criteria it used to determine what is and what is not "reasonable" for a private security force to defend against. 72 Fed. Reg. at 12,713 (E 9); see also 2006 GAO Testimony at 3-4, 11 (E 966-67, 968-F). The NRC merely stated that explaining its criteria would be "unduly restrictive, and would unnecessarily limit the [NRC's] judgment." 72 Fed. Reg. at 12,713 (E 9).

The NRC was required to "cogently explain why it has exercised its discretion in a given manner," and in reviewing that explanation, the Court must "consider whether the decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment," Motor Vehicle Mfrs. Ass'n, 463 U.S. at 43, 48. The NRC has refused to provide any cogent

explanation of the factors it relied upon in determining what is reasonable for a private security force to defend against. It appears, however, that the NRC either believed that it would not be feasible for a plant to defend against air attacks or that it would be too expensive for a plant to do so. Neither factor justifies the NRC's decision here.

**a. Feasibility**

The NRC explained that it decided not to require nuclear plant owners to defend against airborne threats because "active protection" against such threats would require "military weapons and ordnance that rightfully are the responsibilities of the Department of Defense." 72 Fed. Reg. at 12,710 (E 6). As examples, the NRC cited ground-based air defense missiles, no-fly zones, and combat air patrols. See id. The NRC's focus on these tactics as an excuse for not including airborne threats in the DBT rule is a red herring. Neither the CBG Petition nor comments such as those submitted by New York requested that the NRC require such active defense tactics. Instead, the CBG Petition asked the NRC to mandate passive physical security measures, like external steel girders or earthen berms, which licensees could construct quickly for a fraction of the original construction cost of the nuclear plant. CBG Petition at 26 (E 95); see also 12/11/06 Combined Comments of CBG, NIRS, Public Citizen, & UCS to NRC in RIN 3150-

AH60, at 1 (E 988) (stating that "we agree that nuclear power plants should not be outfitted with anti-aircraft guns and have never advocated such measure").

The NRC's explanation for not requiring licensees to actively defend against air-based attacks does not justify the complete exclusion of airborne threats from the DBT rule. The NRC's inclusion of airborne threats in the DBTs would not compel licensees to take actions that they could not legally take. And the NRC did not determine that licensees legally or practically would be unable to construct passive defensive structures or barriers to thwart air-based threats. Absent that determination, the NRC's rationale for excluding air-based threats falls far short.

#### **b. Cost**

Although the NRC denied it, 72 Fed. Reg. at 12,714 (E 10), the NRC's decision as to what is "reasonable" also appears to have been based on its consideration of the cost to licensees of defending against an airborne attack. The 2006 GAO report that examined the 2003 DBT Orders that formed the basis for the current rule, found that "individual commissioners used differing criteria and emphasized different factors, such as cost or practicality of defensive measures," in deciding to exclude certain adversary characteristics, including the threat of airborne attack, from the

DBTs. 2006 GAO Testimony at 4, 10 (emphasis added) (E 967, 968-E). To the extent that the NRC's exclusion of the airborne threat was based upon cost considerations, that is inconsistent with the Atomic Energy Act. See Union of Concerned Scientists, 824 F.2d at 114.

Union of Concerned Scientists involved a challenge to the NRC rule for "backfitting" new safety requirements to existing nuclear reactors. See id. at 110. Based on the Atomic Energy Act's statutory language, its legislative history, existing case law, and prior agency interpretations of the statute, the D.C. Circuit held that the NRC could not take costs into account in establishing safety standards that are necessary to provide the "adequate protection" to the public that the statute mandates. See id. at 114-18. The court vacated the backfitting rule because it allowed the NRC to consider costs in its adequate-protection determinations. See id. at 119-20.

The NRC's reasonable-expectation standard likewise is invalid because it does not constrain the NRC from considering costs in determining what is necessary to provide adequate protection. And to the extent that the NRC actually considered costs in determining whether it is reasonable for a nuclear power plant to protect against air attacks, the DBT regulation is void. To be sure, the D.C. Circuit also held that the NRC may consider costs when it requires protective measures that go beyond the minimum necessary

to ensure adequate protection for the public. See id. at 118. The NRC has expressly stated, however, that the DBT regulation is based on the adequate-protection standard and that costs are therefore not a relevant consideration. See 72 Fed. Reg. at 12,717 (E 13). The NRC admitted in this rulemaking that "it may not legally consider economic factors in determining the level of adequate protection of public health and safety." See id. at 12,714 (E 10). To the extent that the NRC did consider costs, it violated the Atomic Energy Act.

**B. The Mitigation Rationale Conflicts with the NRC's Other Actions and with the Evidence Before It.**

The NRC also failed to provide a reasoned explanation for its second novel rationale for excluding air-based attacks from the DBT rule - that nuclear power plant licensees can provide adequate protection merely by mitigating fires and explosions resulting from airplane crashes. That approach is inconsistent with the NRC's treatment of vehicular and waterborne bomb attacks in the DBT rule. It also is inconsistent with evidence before the agency regarding the vulnerability of nuclear power plants to attacks using explosive devices, including aircraft and vehicle and waterborne bombs.

In explaining why it added vehicular and waterborne bomb attacks to the DBT rule, the NRC expressly stated that doing so was necessary to ensure the "adequate protection to the health and safety of the public" that the Atomic Energy Act requires. See 72 Fed. Reg. at 12,717 (E 13). The NRC therefore ordered that the revised DBT regulation apply even to existing nuclear power plants without analyzing the additional criteria for backfitting desirable but nonessential safety requirements. Id. The NRC thus did not believe that merely having plans to contain large fires would provide adequate protection against the threat caused by an explosion.

The threat posed by an aircraft striking a nuclear power plant is the same, if not greater, than the threat posed by vehicular and waterborne bombs. All these would cause explosions and large fires. If mitigation of large fires and explosions were sufficient to ensure adequate protection, then there would be no need for the NRC to include any type of bomb attack in the DBT. The NRC has failed to acknowledge, much less articulate a rational explanation for, its inconsistent treatment of similar threats. Therefore, the NRC's exclusion of airborne threats from the DBT rule was arbitrary and capricious. See Motor Vehicle Mfrs. Ass'n, 463 U.S. at 43.

The NRC's conclusion that mitigation would provide adequate protection also ignored evidence from numerous prior studies demonstrating the vulnerability of nuclear power reactors and spent



fuel pools to aircraft attacks and other types of attacks using explosive devices. The CBG Petition and several comments specifically referenced and discussed several such studies, many of which were conducted by or for the NRC. See, e.g., 2/21/06 Comments from CIECP to NRC in RIN 3150-AH60, at Appendix A (E 868-69). By that time, the NRC was aware of the NAS Study, as well as the GRS Study. See, e.g. id.; 3/14/05 Letter from Chairman Diaz, NRC, to Sen. Domenici, Chairman Subcomm. on Energy & Water Devel., Comm. on Appropriations (E 440). Moreover, the NEI, a nuclear industry group, admitted in its comments that nuclear power plants were not designed to withstand the impact of a large commercial airliner. See 2/22/06 Comments of NEI to NRC in RIN 3150-AH60, at Enclosure 2, p. 10 (E 891).

The NRC failed to mention most of these studies or explain how the results of any of the studies could be reconciled with the "limited number" of engineering studies that the NRC relied upon to determine that nuclear power plant licensees need not take any defensive precautions against air-based threats, including installing relatively inexpensive passive physical barriers to defend their plants from air attacks. The NRC did not dispute that nuclear power plants face risks from air-based threats. Nor did the NRC dispute in the final rule the conclusions of the NAS Study, GRS Study, the studies by various national laboratories, or the GE Study. Because the NRC has failed to provide a reasoned

explanation for its decision and has "offered an explanation for its decision that runs counter to the evidence before the agency," the NRC's decision to exclude air-based attacks from the DBT rule is arbitrary and capricious. Motor Vehicle Mfrs. Ass'n, 463 U.S. at 43; see also Islander E. Pipeline Co. v. Conn. Dep't of Env'tl. Prot., 467 F.3d 295, 313 (2d Cir. 2006) (finding a denial of an application to be arbitrary and capricious where the agency failed to mention scientific studies in the record with findings contrary to those relied upon by the agency).

## POINT II

### THE NRC VIOLATED NEPA BY FAILING TO PREPARE AN ENVIRONMENTAL IMPACT STATEMENT FOR THE DBT RULE

NEPA "places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action," and "ensures that the agency will inform the public that it has indeed considered environmental concerns in its decisionmaking process." Baltimore Gas & Elec. Co. v. Natural Res. Def. Counsel, Inc., 462 U.S. 87, 97 (1983); see also San Luis Obispo Mothers for Peace, 449 F.3d at 1020. Federal agencies must prepare an EIS for "all major Federal actions significantly affecting the . . . environment." 42 U.S.C. § 4332(2)(C). Where the impacts of an agency action are unclear, an agency must first prepare an EA to determine whether the proposed action may have a significant environmental effect. See Nat'l Parks & Conservation

Ass'n v. Babbitt, 241 F.3d 722, 730 (9th Cir. 2001) (citing 40 C.F.R. § 1501.4). The EA must include brief discussions of the environmental impacts of the proposed action and alternatives, and the evidence and analysis required for determining whether the agency must prepare an environmental impact statement ("EIS"). Save the Yaak Comm. v. Block, 840 F.2d 714, 717-18 (9th Cir. 1988).

"If [the EA] establishes that an agency's 'action may have a significant effect upon the . . . environment, an EIS must be prepared." Nat'l Parks & Conservation Ass'n, 241 F.3d at 730 (quoting Found. for N. Am. Wild Sheep v. U.S. Dep't of Agric., 681 F.2d 1172, 1178 (9th Cir. 1982)). If — and only if — an agency determines that the proposed action will not have any significant impact on the environment, the agency may prepare a more limited environmental assessment ("EA") to support a "Finding of No Significant Impact" instead of a comprehensive EIS. 40 C.F.R. §§ 1501.4(e), 1508.13; see San Luis Obispo Mothers for Peace, 449 F.3d at 1020.

NEPA and this Court's case law interpreting it establish "a relatively low threshold for the preparation of an EIS." Natural Resources Def. Council v. Duvall, 777 F. Supp. 1533, 1537 (E.D. Cal. 1991). An agency must prepare an EIS "not only when the challenged agency action will in fact cause significant effects on the human environment, but also when an agency action may have significant effects on the human environment." No GWEN Alliance of

Lane Co. v. Aldridge, 855 F.2d 1380, 1385 (9th Cir. 1988) (citing Found. for N. Am. Wild Sheep, 681 F.2d at 1178).

An agency's decision not to prepare an EIS is governed by the arbitrary and capricious standard. See Native Ecosystems Council v. Dombeck, 304 F.2d 86, 891 (9th Cir. 2002). That decision "will be considered unreasonable if the agency fails to supply a convincing statement of reasons why potential effects are insignificant." Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1211 (9th Cir. 1998), cert. denied, 527 U.S. 1003 (1999). The statement of reasons is "crucial" to determining whether the agency has taken the requisite "hard look" at the potential environmental impacts of the proposed action. Save the Yaak, 840 F.2d at 717. The Court may defer to an agency decision to proceed without preparing an EIS only when that decision is "fully informed and well considered." LaFlamme v. Fed. Energy Reg. Comm'n, 852 F.2d 389, 398 (9th Cir. 1988).

Here, there is no real dispute that the NRC's final rule is a "major federal action" that may have a significant effect on the environment. As pointed out in comments submitted to the NRC, the DBT rule "bears directly on the degree to which public health and the environment will be protected against the impacts of accidents caused by terrorist attacks." 2/22/06 Comments of San Luis Obispo Mothers for Peace ("SLOMFP") to NRC in RIN 3150-AH60, at 1 (E 905). The NRC's refusal to require licensees to protect against air-based

threats increases the chances of a successful terrorist attack that causes radiological contamination. Thus, the NRC was required to prepare an EIS examining the environmental impacts of its DBT rulemaking, including its exclusion of air-based threats from the DBT rule, and considering alternatives to the proposed rule that would reduce those impacts.

The NRC, however, did not prepare an EIS. The NRC explained its failure to prepare an EIS on two grounds, neither of which is adequate. First, the NRC concluded in its EA that there would be no significant environmental impacts associated with the final rule because the rule would not impose any new requirements beyond those already imposed by the 2003 DBT Orders that were currently in place. See Final EA, at v (E 64). But the NRC never conducted any NEPA analysis of the environmental impacts associated with the 2003 DBT Orders, which the NRC issued without notice-and-comment rulemaking. By relying on those Orders, therefore, the NRC effectively sought to insulate its determination from environmental review, in violation of NEPA.

Second, the NRC stated that it was not preparing an EIS to consider the potential environmental effects of a terrorist attack on nuclear facilities because such effects were "remote, speculative, or embod[ied] the worst-case outcome." 72 Fed. Reg. 12,718 (E 14). This justification flies in the face of a recent decision by this Court on the NRC's NEPA responsibilities. In San Luis Obispo Mothers for Peace, 449 F.3d at 1030, this Court held that it was unreasonable for the NRC to treat terrorist attacks as too remote and speculative to warrant consideration under NEPA when the NRC was deciding whether to approve a license for a spent fuel storage facility. The NRC's contentions were inconsistent with its own efforts to combat terrorist attacks against nuclear facilities. See id. at 1030-31. The Court also determined that the NRC had erred as a matter of law in labeling a terrorist attack the worst-case scenario because of the low or indeterminate probability of such an attack. See id. at 1034. The Court pointed out that NEPA applies even where the probability of an environmental impact is low, where such low probability impacts are reasonably foreseeable and have potentially catastrophic consequences. See id. at 1033 (citing 40 C.F.R. § 1502.22(b)(3) & (4)). And while in the DBT rulemaking the NRC claimed here that "the consequences of a terrorist attack cannot be said to be 'an effect' of this rule," 72 Fed. Reg. at 12,718-19 (E 14-15), this Court has already decided that there can be a link between NRC actions that affect licensing

decisions and the altered risk of terrorist attack. San Luis Obispo Mothers for Peace, 449 F.3d at 1029-30.

In response to comments stating that the proposed rule failed to satisfy NEPA, the NRC attempted to distinguish San Luis Obispo Mothers for Peace.<sup>7</sup> The NRC argued that while the case required the NRC consider the potential effects of a terrorist attack as a result of a licensing decision, that "does not necessarily lead to the conclusion that such effects should be considered as part of this rulemaking action." Id. at 12,719 (E 15) (emphasis added). For purposes of the NRC's obligations under NEPA, however, this is a distinction without a difference. The NRC's rulemaking here "codif[ies] a generic standard for the establishment of security requirements at nuclear facilities." 2/22/06 Comments of SLOMFP, at 3 (E 907). The effect of the rulemaking is to remove from each present and future licensing decision any requirement to consider

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<sup>7</sup> In fact, the NRC simply disagrees with San Luis Obispo Mothers for Peace, as it recently made clear in another license proceeding:

[W]e disagree with the Ninth's Circuit's view. We of course will follow it, as we must, in the Diablo Canyon proceeding itself. But the NRC is not obliged to adhere, in all of its proceedings, to the first court of appeals decision to address a controversial question. . . . [W]e continue to believe that NEPA does not require the NRC to consider the environmental consequences of hypothetical terrorist attacks on NRC-licensed facilities.

In the Matter of Amergen Energy Co., LLC (License Renewal for Oyster Creek Nuclear Generating Station), NRC Docket No. 50-0219-LR, 2007 NRC LEXIS 37, at \*7 (Feb. 26, 2007).

security requirements necessary to protect against the threat of terrorist attacks. If the NRC must consider the potential environmental effects of a terrorist attack in a specific licensing determination, as the Court held in San Luis Obispo Mothers for Peace, then the NRC certainly must consider such effects when promulgating a generic rule that the NRC will substitute for determinations it would have made in specific licensing decisions.

As in San Luis Obispo Mothers for Peace, it is not reasonable for the NRC to determine here that terrorist attacks on nuclear facilities are too remote or speculative to warrant consideration under NEPA. The NRC's own actions indicate that it considers air-based attacks on nuclear facilities to be reasonably foreseeable, albeit of low probability. Thus, "the EA prepared in reliance on that determination is inadequate and fails to comply with NEPA's mandate." Id. at 1035. This Court therefore should reject the NRC's rationales for not preparing an EIS and, on this basis alone, remand the DBT rule to the NRC.

\* \* \* \* \*

Before 9/11, there were warning signs of an impending terrorist strike within the United States. At that time, however, key decision makers never imagined that terrorists would use aircraft in such a destructive manner. Since then, responsible government officials from the President on down have recognized that terrorists continue to seek to cause widespread death and



destruction. The same officials have expressly and repeatedly warned that terrorists are targeting nuclear facilities. In those circumstances, the NRC's decision to exclude air-based threats from the DBT regulation is arbitrary.

#### CONCLUSION

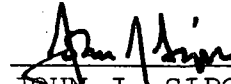
This Court should vacate the NRC's decision to exclude air-based threats from the final rule and remand the matter to the NRC for prompt action.

Dated: Albany, New York  
October 24, 2007

Respectfully submitted,

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**STATEMENT OF RELATED CASES**

This petition has been consolidated with a related one, Public Citizen v. NRC, No. 07-71868 (9th Cir.). Counsel are unaware of any other related cases pending in this Court.

Form 8. Certificate of Compliance Pursuant to Fed. R. App. P. 32(a)(7)(C) and Circuit Rule 32-1 for Case Number 07-72555

(see next page) Form Must Be Signed By Attorney or Unrepresented Litigant *and attached to the back of each copy of the brief*

I certify that: (check appropriate option(s))

- ☒ 1. Pursuant to Fed. R. App. P. 32 (a)(7)(C) and Ninth Circuit Rule 32-1, the attached opening/answering/reply/cross-appeal brief is
- ☐ Proportionately spaced, has a typeface of 14 points or more and contains \_\_\_\_\_ words (opening, answering, and the second and third briefs filed in cross-appeals must not exceed 14,000 words; reply briefs must not exceed 7,000 words),
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- ☒ Monospaced, has 10.5 or fewer characters per inch and contains 11,034 words or \_\_\_\_\_ lines of text (opening, answering, and the second and third briefs filed in cross-appeals must not exceed 14,000 words or 1,300 lines of text; reply briefs must not exceed 7,000 words or 650 lines of text).
- ☐ 2. The attached brief is **not** subject to the type-volume limitations of Fed. R. App. P. 32(a)(7)(B) because
- ☐ This brief complies with Fed. R. App. P. 32(a)(1)-(7) and is a principal brief of no more than 30 pages or a reply brief of no more than 15 pages;
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- or is
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- ☐ This brief is being filed in a capital case pursuant to the type-volume limitations set forth at Circuit Rule 32-4 **and is**
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4. *Amicus Briefs*

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October 24, 2007

Date



Signature of Attorney or  
Unrepresented Litigant

ADDENDUM

42 U.S.C. § 2232

§ 2232. License applications

(a) Form and contents. Each application for a license hereunder shall be in writing and shall specifically state such information as the Commission, by rule or regulation, may determine to be necessary to decide such of the technical and financial qualifications of the applicant, the character of the applicant, the citizenship of the applicant, or any other qualifications of the applicant as the Commission may deem appropriate for the license. In connection with applications for licenses to operate production or utilization facilities, the applicant shall state such technical specifications, including information of the amount, kind, and source of special nuclear material required, the place of the use, the specific characteristics of the facility, and such other information as the Commission may, by rule or regulation, deem necessary in order to enable it to find that the utilization or production of special nuclear material will be in accord with the common defense and security and will provide adequate protection to the health and safety of the public. Such technical specifications shall be a part of any license issued. The Commission may at any time after the filing of the original application, and before the expiration of the license, require further written statements in order to enable the Commission to determine whether the application should be granted or denied or whether a license should be modified or revoked. All applications and statements shall be signed by the applicant or licensee. Applications for, and statements made in connection with, licenses under sections 2133 and 2134 shall be made under oath or affirmation. The Commission may require any other applications or statements to be made under oath or affirmation.

\* \* \*

PUBLIC LAW 109-58; August 8, 2005  
ENERGY POLICY ACT OF 2005  
119 STAT 594, 799-800

Subtitle D - Nuclear Security

SEC. 651. NUCLEAR FACILITY AND MATERIALS SECURITY

(a) SECURITY EVALUATIONS; DESIGN BASIS THREAT RULEMAKING.-

(1) IN GENERAL. - Chapter 14 of the Atomic Energy Act of 1954 (42 U.S.C. 2201 et seq.) (as amended by section 624(a)) is amended by adding at the end the following:

\* \* \*

"Sec. 170E. DESIGN BASIS THREAT RULEMAKING.

"a. Rulemaking.--The Commission shall--

"(1) not later than 90 days after the date of enactment of this section, initiate a rulemaking proceeding, including notice and opportunity for public comment, to be completed not later than 18 months after that date, to revise the design basis threats of the Commission; or

"(2) not later than 18 months after the date of enactment of this section, complete any ongoing rulemaking to revise the design basis threats.

"b. Factors.--When conducting its rulemaking, the Commission shall consider the following, but not be limited to--

"(1) the events of September 11, 2001;

"(2) an assessment of physical, cyber, biochemical, and other terrorist threats;

"(3) the potential for attack on facilities by multiple coordinated teams of a large number of individuals;

"(4) the potential for assistance in an attack from several persons employed at the facility;

"(5) the potential for suicide attacks;

"(6) the potential for water-based and air-based threats;

"(7) the potential use of explosive devices of considerable size

and other modern weaponry;

"(8) the potential for attacks by persons with a sophisticated knowledge of facility operations;

"(9) the potential for fires, especially fires of long duration;

"(10) the potential for attacks on spent fuel shipments by multiple coordinated teams of a large number of individuals;

"(11) the adequacy of planning to protect the public health and safety at and around nuclear facilities, as appropriate, in the event of a terrorist attack against a nuclear facility; and

"(12) the potential for theft and diversion of nuclear materials from such facilities.".

\* \* \*

[codified at 42 U.S.C. § 2210e]

Code of Federal Regulations  
TITLE 10-ENERGY  
CHAPTER I- NUCLEAR REGULATORY COMMISSION  
PART 73-PHYSICAL PROTECTION OF PLANTS AND MATERIALS  
GENERAL PROVISIONS

10 C.F.R. 73.1

**§ 73.1 Purpose and scope.**

(a) *Purpose.* This part prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites and in transit and of plants in which special nuclear material is used. The following design basis threats, where referenced in ensuing sections of this part, shall be used to design safeguards systems to protect against acts of radiological sabotage and to prevent the theft or diversion of special nuclear material. Licensees subject to the provisions of § 73.20 (except for fuel cycle licensees authorized under Part 70 of this chapter to receive, acquire, possess, transfer, use, or deliver for transportation formula quantities of strategic special nuclear material), §§ 73.50, and 73.60 are exempt from §§ 73.1(a)(1)(i)(E), 73.1(a)(1)(iii), 73.1(a)(1)(iv), 73.1(a)(2)(iii), and 73.1(a)(2)(iv). Licensees subject to the provisions of § 72.212 are exempt from § 73.1(a)(1)(iv).

(1) *Radiological sabotage.* (i) A determined violent external assault, attack by stealth, or deceptive actions, including diversionary actions, by an adversary force capable of operating in each of the following modes: A single group attacking through one entry point, multiple groups attacking through multiple entry points, a combination of one or more groups and one or more individuals attacking through multiple entry points, or individuals attacking through separate entry points, with the following attributes, assistance and equipment:

(A) Well-trained (including military training and skills) and dedicated individuals, willing to kill or be killed, with sufficient knowledge to identify specific equipment or locations necessary for a successful attack;

(B) Active (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack) or passive (e.g., provide information), or both, knowledgeable inside assistance;

(C) Suitable weapons, including hand-held automatic weapons, equipped with silencers and having effective long range accuracy;



(D) Hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safeguards system; and

(E) Land and water vehicles, which could be used for transporting personnel and their hand-carried equipment to the proximity of vital areas; and

(ii) An internal threat; and

(iii) A land vehicle bomb assault, which may be coordinated with an external assault; and

(iv) A waterborne vehicle bomb assault, which may be coordinated with an external assault; and

(v) A cyber attack.

(2) *Theft or diversion of formula quantities of strategic special nuclear material.* (i) A determined violent external assault, attack by stealth, or deceptive actions, including diversionary actions, by an adversary force capable of operating in each of the following modes: a single group attacking through one entry point, multiple groups attacking through multiple entry points, a combination of one or more groups and one or individuals attacking through multiple entry points, or individuals attacking through separate entry points, with the following attributes, assistance and equipment:

(A) Well-trained (including military training and skills) and dedicated individuals, willing to kill or be killed, with sufficient knowledge to identify specific equipment or locations necessary for a successful attack;

(B) Active (e.g., facilitate entrance and exit, disable alarms and communications, participate in violent attack) or passive (e.g., provide information), or both, knowledgeable inside assistance;

(C) Suitable weapons, including hand-held automatic weapons, equipped with silencers and having effective long-range accuracy;

(D) Hand-carried equipment, including incapacitating agents and explosives for use as tools of entry or for otherwise destroying reactor, facility, transporter, or container integrity or features of the safe-guards system;

(E) Land and water vehicles, which could be used for transporting

personnel and their hand-carried equipment; and

(ii) An internal threat; and

(iii) A land vehicle bomb assault, which may be coordinated with an external assault; and

(iv) A waterborne vehicle bomb assault, which may be coordinated with an external assault; and

(v) A cyber attack.

(b) *Scope.* (1) This part prescribes requirements for:

(i) The physical protection of production and utilization facilities licensed under parts 50 or 52 of this chapter,

(ii) The physical protection of plants in which activities licensed pursuant to part 70 of this chapter are conducted, and

(iii) The physical protection of special nuclear material by any person who, pursuant to the regulations in part 61 or 70 of this chapter, possesses or uses at any site or contiguous sites subject to the control by the licensee, formula quantities of strategic special nuclear material or special nuclear material of moderate strategic significance or special nuclear material of low strategic significance.

\* \* \*

[EFFECTIVE DATE NOTE: 72 FR 12705, 12726, Mar. 19, 2007, revised paragraph (a), effective Apr. 18, 2007; 72 FR 49352, 49561, Aug. 28, 2007, revised paragraph (b)(1)(i), effective Sept. 27, 2007.]

DECLARATION OF SERVICE

TERESA FOUNTAIN, pursuant to 28 U.S.C. § 1746, declares under penalty of perjury as follows:

I am over eighteen years of age and an employee in the office of Andrew M. Cuomo, Attorney General of the State of New York.

On the 24th day of October, 2007, I served (1) the State of New York's Brief on Petition for Review of Final Action of the United States Nuclear Regulatory Commission, (2) an Excerpt of the Record, and (3) a NRC Administrative Rulemaking Docket, upon the individuals named below by depositing true copies thereof, properly enclosed in a sealed, postpaid United Parcel Service ("UPS") wrapper, specifying next day air delivery, in the Office of the Attorney General's Mail Room for delivery to the UPS pick up location in the Empire State Plaza, Albany, New York, directed to said individuals at the addresses designated by them for that purpose as follows:

Cathy Catterson  
Clerk of the Court  
U.S. Court of Appeals - 9<sup>th</sup> Circuit  
95 7<sup>th</sup> Street  
San Francisco, CA 94103

Steven F. Crockett, Esq.  
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Michael A. Bauser, Esq.  
Nuclear Energy Institute  
1776 I Street, Suite 400  
Washington, DC 20006

I declare under penalty of perjury that the foregoing is true and correct.

Executed on October 24, 2007.

*Teresa Fountain*  
TERESA FOUNTAIN