

UNITED STATES COURT OF APPEAL FOR THE THIRD CIRCUIT  
DOCKET NOS. 06-5140, 07-1559 AND 07-1756

STATE OF NEW JERSEY,	)	
	)	PETITION FOR REVIEW
Petitioner,	)	OF THE FINAL ISSUANCE
	)	OF NUREG-1757 BY THE
v.	)	UNITED STATES NUCLEAR
	)	REGULATORY COMMISSION
UNITED STATES NUCLEAR REGULATORY	)	
COMMISSION and UNITED STATES	)	
OF AMERICA,	)	
	)	
Respondents.	)	

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BRIEF ON BEHALF OF PETITIONER, STATE OF NEW JERSEY

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ANNE MILGRAM  
ATTORNEY GENERAL OF NEW JERSEY  
R.J. Hughes Justice Complex  
P.O. Box 093  
Trenton, New Jersey 08625-0093  
Attorney for Petitioner  
State of New Jersey  
(609) 292-1509

PATRICK DeALMEIDA  
Assistant Attorney General  
Of Counsel

---

ANDREW D. REESE  
KENNETH W. ELWELL  
GWEN FARLEY  
Deputy Attorneys General  
On the Brief

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**SUBJECT MATTER AND APPELLATE JURISDICTION**

Pursuant to Rule 15 of the Federal Rules of Appellate Procedure, §2239(b) of the Atomic Energy Act, 42 U.S.C. 2239(b), and the Hobbs Act, 28 U.S.C. 2342, et seq., the State of New Jersey (State) petitioned the Court to review the determination of the United States Nuclear Regulatory Commission ("NRC") to finalize revisions of NUREG-1757 guidance published by the NRC on its website on October 27, 2006 (<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/esr1757/>).<sup>1</sup> The NRC's finalization of these revisions to NUREG-1757 was again announced in 71 Fed. Reg. 78284 on December 28, 2006.<sup>2</sup>

The State, in response to the October 27, 2006 publication of the finalized NUREG-1757 on the NRC website, petitioned this Court for review on December 22, 2006. (A1). That petition for review was filed in order to comply with the 60-day time limit set forth in 42 U.S.C. §2344 and has been docketed by this Court as No. 06-5140. The State has argued in its submission to the Court in No. 06-5140 that it was jurisdictionally

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<sup>1</sup>The relevant portions of NUREG-1757 to this appeal are included in the State's Appendix at A65-A310. However, copies of the complete three volumes of NUREG-1757 were submitted with the State's initial Petition for Review.

<sup>2</sup>The State of New Jersey participated as a party in the proceeding before the NRC by submitting timely comments dated December 28, 2005 on Draft NUREG-1757 Supplement 1. (A410, A432-A440).

appropriate for the State to have filed a petition for review in response to the October 27, 2006 NRC website publication. The NRC, in its submission in No. 06-5140 has stated that "due to the special circumstances present in this case, the NRC does not object to this Court finding that 'entry' of the NUREG for purposes of the Hobbs Act was the publication of the document on the agency's website" (footnote omitted). Nevertheless, since this Court may determine that the time for appeal was triggered by the December 28, 2006 Federal Register notice, the State filed a second petition for review which is identical to the petition in No. 06-5140. (A7).

Also, pursuant to Rule 15 of the Federal Rules of Appellate Procedure, §2239(b) of the Atomic Energy Act ("AEA"), 42 U.S.C. 2239(b), and the Hobbs Act, 28 U.S.C. 2342, et seq., the State of New Jersey petitioned the Court to review the Order of the United States Nuclear Regulatory Commission ("NRC") which denied the State of New Jersey's Petition for a hearing on NUREG-1757, Consolidated Decommissioning Guidance ("NUREG-1757"). (A21). The State of New Jersey's petition sought an NRC hearing pursuant to 10 C.F.R. §2.3069 and the Atomic Energy Act, 42 U.S.C. 2239(a)(1)(A). The NRC's Order at issue here was docketed on January 12, 2007 and is in the Appendix to this brief at A327-A331.

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The State has argued at length in its Brief in Opposition by the State of New Jersey to Federal Respondents' Motion to Dismiss the Petition for Review filed February 22, 2007 that the

NRC's issuance of NUREG-1757 has the effect of a substantive rule or regulation made reviewable by the Hobbs Act. The jurisdiction to review actions of the NRC is established in the United States Circuit Court of Appeals by the Hobbs Act.

The Court of Appeals ... has exclusive jurisdiction to enjoin, set aside, suspend (in whole or in part), or to determine the validity of -

(H) all final orders of the Atomic Energy Commission made reviewable by Section 2239 of Title 42;

28 U.S.C. §2342.

Section 2239 of the Atomic Energy Act, 42 U.S.C. §2239(b), states that

The following Commission actions shall be subject to judicial review in the manner prescribed in chapter 158 of Title 28 and chapter 7 of Title 5:

- (1) Any final order entered in any proceeding of the kind specified in subsection (a) of this section. 42 U.S.C. §2239(b).

Section 2239(a) specifies the following proceedings

any proceeding under this chapter, for the granting, suspending, revoking, or amending of any license ... and in any proceeding for the issuance or modification of rules and regulations dealing with the activities of licenses.

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42 U.S.C. §2239(a).

The courts have found that §2239(a) review in the circuit courts is triggered by a policy shift by the NRC involving an

interpretation of its regulation and also by a determination by the NRC to adopt a non-binding policy statement when a regulation is arguably required. Citizens Awareness Network, Inc. v. United States Nuclear Regulatory Commission, 59 F.3d 284, 291-92 (1st Cir. 1995), demonstrates that the courts view substantive interpretive policy changes by the NRC as falling within the actions described in §2239(a) and therefore subject to appeal.

In Public Citizen v. Nuclear Regulatory Commission, 845 F.2d 1105 (D.C. Cir. 1988), the NRC issued a non-binding policy statement on an issue, but petitioners contended that the Nuclear Waste Policy Act of 1988, 42 U.S.C. §10226 (1982), required adoption of regulations. When petitioners reached the Circuit Court, the Court found that petitioners could seek court review of the policy statement. Describing the policy statement, the court said, "The agency has acted. The Policy Statement is a formal product of the Commission ..." and therefore reviewable under the Hobbs Act and §2239(a). Public Citizen, 845 F.2d at 1108.

The National Environmental Policy Act ("NEPA") requires federal agencies to conduct an environmental impact statement ("EIS") for any "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. §4332(2)(C).

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Specifically, NUREG-1757 establishes a new license called the long

term control license, which allows decommissioning<sup>3</sup> facilities to permanently dispose some or all of their radioactive waste at the decommissioned facility. (NUREG-1757 Vol 1 page 17-65, A227.) NUREG-1757 provides various terms and conditions that a long term control license would provide, including required institutional and engineering controls. (NUREG-1757 Vol 1 pages 17-65, 17-79 to 17-80, A227, A241-A242.) NUREG-1757 will increase the number of permanent radioactive waste disposal sites throughout the United States and multiply the risks such sites pose to health and the environment. NEPA requires that the environmental consequences of this agency policy be considered. The NRC's finalization of this guidance without having conducted an EIS is contrary to NEPA.

This Court also has jurisdiction to review the NRC's Order dated January 12, 2007 which denied the State's request for a hearing on NUREG-1757. Again, NUREG-1757 has the effect of modifying rules and regulations dealing with the activities of

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<sup>3</sup>The License Termination Rule ("LTR") defines "decommission" as

to remove a facility or site safely from service and reduce residual radioactivity to a level that permits --

(1) Release of the property for unrestricted use and termination of the license; or

(2) Release of the property under restricted conditions and termination of the license.

10 C.F.R. §20.1003.

licensees and is reviewable under 42 U.S.C. 2239. Furthermore, the NUREG-1757 guidance violates the Atomic Energy Act because that statute requires the NRC to utilize rules or regulations when establishing a new license, when setting the terms and conditions of a new license and when setting forth the information an applicant for a license is required to submit. 42 U.S.C. 2232(A), 2233. The NUREG-1757 guidance establishes a new NRC license, a long-term control license, which allows permanent restricted use disposal of radioactive wastes. (NUREG-1757 Vol 1 page 17-65, A227; 71 Fed. Reg. 66986).

The record and proofs in this matter will demonstrate that the State has standing in this appeal because it has (1) an injury in fact; (2) there is a causal connection between the injury and NUREG-1757; and (3) it is likely that the injury will be redressed by a favorable decision of this Court. See Lujan v. Defenders of Wildlife, 504 U.S. 555, 560-61 (1992). The State is suffering an injury in fact because water and soil (sediment) in the Hudson Branch Creek is contaminated with radioactivity at levels above background and which exceed surface water standards, or State soil remediation standards, or both. Shieldalloy is storing approximately 65,000 m<sup>3</sup> of radioactive waste outside at its facility behind a fence and without any cover adjacent to Hudson Branch Creek. Shieldalloy's own sampling for uranium-238, thorium-232 and radium-226 yields results which violate either surface

water standards, soil remediation standards, or both.

**STATEMENT OF THE ISSUES PRESENTED**

1. Whether the NRC violated the AEA by providing in a guidance document titled NUREG-1757 the terms and conditions of a new license called the LTC license, instead of by rule or regulation; and whether the NRC violated the AEA by setting forth in NUREG-1757 the information that an applicant should submit in an application for the new license, instead of by rule or regulation.

2. Whether the NRC acted arbitrarily and capriciously by assuming that a private entity can endure to perpetuity to enforce the provisions of the LTC license or LA/RC to maintain site restrictions and engineered barriers for a decommissioned site containing long-lived radioactive waste.

3. Whether the NRC acted arbitrarily and capriciously by allowing applicants seeking to leave radioactive waste at its decommissioned facility to model radiation doses for 1,000 years, regardless of whether the waste will remain a radioactive hazard beyond 1,000 years.

4. Whether the NRC acted arbitrarily and capriciously by applying high discount rates over long-time periods to the monetary benefit of averting radiation doses in the future so that the health and safety of future generations are rendered inconsequential.

5. Whether the NRC acted arbitrarily and capriciously by allowing licensees to assume a discount rate on their financial assurance over 1,000 years to assume that financial assurance posted today can provide income to maintain a decommissioned site containing long-lived radioactive waste in perpetuity.

6. Whether the NRC acted arbitrarily and capriciously by failing to conduct an Environmental Impact Statement on the effect of NUREG-1757 since the provisions regarding the LTC license, discount rates, and 1,000-year modeling will make it easier for facilities to leave radioactive waste containing long-lived nuclides at their decommissioned facilities throughout the country.

7. Whether the NRC violated the AEA by failing to grant the State a hearing on NUREG-1757.

### STATEMENT OF THE CASE

This appeal arises out of the NRC October 2006 amendments to the "NUREG-1757, Consolidated Decommissioning Guidance" (NUREG-1757). Included in these provisions is a completely new license called the Long Term Control ("LTC") license, which would allow a facility to leave its radioactive waste onsite, even if the waste contains long-lived nuclides that remain a hazard in perpetuity. The NRC did not conduct rulemaking prior to offering the LTC license in violation of the Atomic Energy Act ("AEA"), 42 U.S.C. §§ 2232(a), 2333, which requires that terms and conditions of licenses be established by regulation. Other provisions of the NUREG-1757 amendments being appealed include provisions allowing modeling for radiation doses to the public for only the next 1,000 years (even though certain radioactive wastes will remain a hazard to perpetuity); provisions allowing applicants to assume an investment rate for each year for the next 1,000 years to calculate the required financial assurance; and provisions to assume a discount rate to calculate whether the proposed decommissioning would achieve reductions in residual radioactivity that are as low as reasonably achievable ("ALARA"). These NUREG-1757 provisions are in violation of the License Termination Rule ("LTR"), 10 C.F.R. Part 20 Subpart E, and the AEA mandate that the NRC protect public health and safety, 42 U.S.C. §§ 2012(d), 2013(d), 2099, 2201(b). The NRC failed to comply with the National Environmental Policy Act

("NEPA"), 42 U.S.C. § 4321 et seq. in creating the LTC license. Finally, the NRC incorrectly denied New Jersey's request for a hearing on these described deficiencies in NUREG-1757.

#### **STATEMENT OF RELATED CASES**

The State of New Jersey on December 22, 2006 filed a Petition for Rulemaking on NUREG-1757 and a Petition for Hearing on NUREG-1757 with the NRC. The petition for Rulemaking is still pending with the agency. By Order dated January 12, 2007, the NRC denied the State's Petition for Hearing. (A327-A331). The State petitioned this Court for review of the NRC's January 12, 2007 Order. (A21-A64). That petition is the subject of Docket No. 07-1756.

The State on January 16, 2007 filed a Petition for Hearing on the Shieldalloy Metallurgical Corp. Decommissioning Plan ("DP") in response to the notice of opportunity to request a hearing published at 71 Fed. Reg. 66986. That petition raised 17 separate contentions that the decommissioning plan will not protect public health and safety, and asserts that the LTC license amendment sought by Shieldalloy is not permitted by law. On March 28, 2007 the Atomic Safety and Licensing Board ("ASLB") of the NRC ruled on the State's contentions by granting the State's contention

5. Contention 5 asserted that the decommissioning plan obtains inaccurate dose modeling results by ignoring the likely scenario of groundwater contamination from the posed disposal of radioactive waste, and by ignoring other reasonable assumptions. The ASLB deferred ruling on the State's other 16 contentions on the ground that Shieldalloy's DP could be revised, making the other contentions moot and raising new contentions. None of the parties appealed that determination to the Commission. The ASLB has required Shieldalloy and the NRC Staff to submit monthly reports on the status of the DP. In its first report, dated June 8, 2007, NRC notes that it has submitted a request for additional information to Shieldalloy to assist with its Environmental Impact Statement on the DP, and will submit a request for additional information to Shieldalloy on technical issues. Shieldalloy's first monthly report, dated June 7, 2007, states that it will revise the DP to consider the groundwater pathway of contamination, but pointedly notes that, "Shieldalloy contemplates making no changes to its proposed approach to the decommissioning of Newfield. Shieldalloy will continue to rely on the LTC license as the basis for its decommissioning plan."

### STANDARD OF REVIEW

The standard of review is whether the agency action is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A); DOT v. Pub. Citizen, 541 U.S. 752, 763 (2004); Alaska Dep't of Env'tl. Conservation v. EPA, 540 U.S. 461 496-97 (2004).

### STATEMENT OF THE FACTS

Prior to 1997, NRC regulations required a decommissioning facility to remediate its site and reduce residual radioactive materials and waste so that the license could be terminated and the site could be released for unrestricted use. 62 Fed. Reg. 39058, 39069 (July 21, 1997) (Section B.3.1); 53 Fed. Reg. 24018 (June 27, 1988). Releasing a site under restricted use was not an option until 1997 when the NRC amended the License Termination Rule ("LTR"). 62 Fed. Reg. at 39088 (codified at 10 C.F.R. Part 20, Subpart E). After that rule revision, decommissioning facilities could apply to dispose permanently their radioactive waste onsite by releasing their site for restricted use. 10 C.F.R. §20.1403. One of the LTR's conditions for restricted release is the requirement that the "licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that" radioactivity remains below a specified level. 10 C.F.R. §20.1403(b).

The NRC relied upon a Generic Environmental Impact Statement ("GEIS") for allowing restricted use in the LTR. 62 Fed. Reg. at 39069 (Section B.3.2). The GEIS stated that restricted release may be preferable in certain circumstances where greater public or environmental damage may result if a site is remediated to unrestricted release standards. Id. This may be the case for short-lived nuclides with half-lives under thirty years because

institutional controls would only be required onsite for a finite period of time. Id.

Where a licensee applies to leave radioactive waste containing long-lived nuclides at its facility that poses a hazard beyond a 100-year period, the NRC stated in its response to public comments that "[m]ore stringent institutional controls will be required in these situations, such as legally enforceable deed restrictions and/or controls backed up by State and local government control or ownership, engineered barriers, and Federal ownership, as appropriate." 62 Fed. Reg. at 39070 (Response to comment B.3.3). Based on this regulatory intent, the NRC would require Federal ownership and control of the site for the longest-lived nuclides, which would constitute the most durable institutional control.

Indeed, Federal or State ownership and control of the site is required for low-level radioactive disposal facilities licenses under 10 C.F.R. Part 61, 10 C.F.R. §61.59(a), high-level radioactive waste disposal facilities, 42 U.S.C. §10131(a)(4), (a)(5), and uranium and thorium recovery facilities, 42 U.S.C. §2113(b)(1)(A).

On August 23, 2000, NRC Staff provided an analysis associated with the problem of the future funding of complex decommissioning sites under the LTR. (SECY-02-0008 page 2, A467). In response to this analysis, on December 19, 2000, the Commission

directed the Staff to pursue a Memorandum of Understanding ("MOU") with the Department of Energy ("DOE") that would define the criteria and process that each agency would use to determine whether the DOE would take control and ownership of a decommissioned site to facilitate the required institutional controls under the LTR. Id. at 3, A468. NRC Staff also estimated that only five sites existed under NRC jurisdiction that presented complex decommissioning and future funding problems. Id.

DOE never entered into a MOU regarding the criteria and process of taking control and ownership of decommissioned sites, presumably because it was concerned with future liability. See id. at 4, A469 ("DOE staff became concerned about potential liabilities and the appearance that completing an MOU might be viewed as a DOE commitment to the future transfer of candidate restricted-use sites.").

Prior to DOE's refusal to enter into the MOU, on September 15, 2000, NRC Staff issued "NUREG-1727, NMSS Decommissioning Standard Review Plan," which offered guidance for facilities decommissioning pursuant to the LTR. (NUREG-1727 pages 0.1 to 0.2, A351-A352). This document stated that for sites containing long-lived nuclides, such as uranium and thorium, institutional controls typically required would be "legally enforceable deed restrictions backed up by State and local government control or ownership, engineered barriers, and as

appropriate, Federal ownership." Id. at 16.5 n.2, A357. The document continually reiterated this position: "Government control and/or ownership is generally appropriate for sites involving large quantities of uranium and thorium contamination and for those sites where the potential dose to the public could exceed 1 mSv/yr (100 mrem/yr) if institutional controls fail." Id. at 16.11, A363. The LTC license was not contemplated by NUREG-1727 as an acceptable institutional control. As discussed below in section II(A), the LTC license will likely fail as an institutional control for long-lived nuclides because a private entity cannot be expected to endure to perpetuity to enforce a LTC license. NUREG-1727 also states that institutional controls should "[r]emain in place for the duration of the time they are needed." Id. at 16.6, A358. This guidance document was replaced in September 2003 with "NUREG-1757, Consolidated Decommissioning Guidance." (NUREG-1757 vol. 1 pages iii, xiii, A68, A69).

In September 2005, the NRC committed a complete reversal in policy and practice without any rulemaking or rational analysis when it proposed to allow onsite disposal of long-lived nuclides without Federal or State control and ownership of the site. The reversal took place when NRC Staff issued Draft Supplement 1 to NUREG-1757 in September 2005. Draft Supplement 1 contained a draft of the provisions currently being appealed in this matter. (See NUREG-1757 vol. 1 page xiii, A69; 70 Fed. Reg. 56940.) Those

provisions were incorporated into NUREG-1757 largely unchanged.

In Draft Supplement 1, the NRC proposed for the first time a new type of license called the LTC license. (NUREG-1757 vol. 1 page 17-65, A227.) The LTC license was proposed to be used as the institutional control where Federal or State ownership and control of a decommissioned site is unavailable. Id. pages 17-65 to 67, A227-A229. The LTC license would require the licensee to maintain engineered barriers, fencing, signs, and access restrictions for as long as the radiological hazard. Id. The Draft also contained provisions concerning modeling for radiation doses to the public for only the next 1,000 years (even though certain radioactive wastes will remain a hazard to perpetuity) and provisions allowing applicants to assume a 1% investment rate for each year for the next 1,000 years to calculate the required financial assurance. The NRC Staff received only 12 comments to Draft Supplement 1 (including from New Jersey). (SECY-06-0143, Enclosure 1, A538; A410-A457).

In October 2006, Draft Supplement 1 was incorporated into NUREG-1757 largely unchanged by way of its posting on NRC's website at [www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757](http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757). The NRC also published a Notice of Availability in the Federal Register that the revised NUREG-1757 was available on its website. 71 Fed. Reg. 78234. By incorporating Draft Supplement 1 into NUREG-1757, the NRC was making the LTC license, a completely new license,

available to the regulated community for the first time. (NUREG-1757 vol. 1 page 17-65, A227.)

According to NUREG-1757, Draft Supplement 1 was supposedly "analyzed by the staff in two Commission papers (SECY-03-0069, Results of the LTR Analysis; and SECY-04-0035, Results of the LTR Analysis of the Use of Intentional Mixing of Contaminated Soil)." Id. While the latter document is not relevant to the subject matter of this appeal, the former document known as SECY-03-0069 is relevant.

With regard to the institutional controls required by the LTR for properties released under restricted conditions, NRC Staff's analysis in SECY-03-0069 reiterated the NRC's response to public comments on the LTR and previous NRC policies: "more stringent controls will be required for exposures beyond the 100-year period, 'such as legally enforceable deed restrictions and/or control backed up by State or local government control or ownership.'" (SECY 03-0069, Attachment 1, Pages 18 to 19, A507-A508). The document further stated that "[t]he controls should be expected to last as long as they are needed." Id. at 19, A508. The document states that higher-hazard materials or long-lived nuclides require more durable institutional controls. Id. at 31, A520. The most durable institutional controls are stated to be Federal or State ownership and control of the site. Id.

In contrast to these pronouncements, SECY-03-0069 also

states that a new recommended option, the possession-only license, may be utilized in lieu of Federal or State ownership and control for sites containing long-lived nuclides. Id. at 25, A514. SECY-03-0069 states that "for long-lived radionuclides, the license would likely be permanent." Id. at 26, A515. This portion of SECY-03-0069 therefore indicates that even for the longest-lived nuclides, the possession-only license may be utilized. SECY-03-0069 fails to reconcile these contradictory conclusions.

To add to the discrepancy, SECY-03-0069 also states that a possession-only license was not envisioned by the regulations to constitute the institutional control for decommissioned sites: "NRC licensing oversight for some sites could be permanent because the current sites considering restricted release are sites with uranium and thorium contamination. Although this NRC role was not envisioned under the LTR, it is similar to the existing statutory role under UMTRCA for permanent NRC oversight of DOE's long-term stewardship of Title I and II uranium recovery sites." (SECY-03-0069 page 27 (emphasis added), Exh. A516). Rather, the License Termination Rule obviously envisions license termination upon completion of the decommissioning. 10 C.F.R. Part 20, Subpart E.

Furthermore, SECY-03-0069 admits that the emphasis of the regulations concerning standards for protection against radiation at 10 C.F.R. Part 20 is for the protection of the public and workers from "imminent exposures" to excessive radiation, "not

projected long-term exposures." SECY-03-0069, Attachment 8, page 2, A522.

On July 5, 2006, NRC Staff issued SECY-06-0143 which responded to stakeholder comments to SECY-03-0069. SECY-06-0143 contained irreconcilable contradictions similar to SECY-03-0069. NRC Staff discussed the problem of legacy sites, which are sites that are complex and difficult to decommission. Legacy sites were discussed in the context of operating facilities wishing to decommission only a portion of their site. Thus, this discussion is limited to only short-term disposals that would remain onsite until the facility permanently decommissions pursuant to the LTR. NRC Staff stressed that requiring a lower dose limit and additional financial assurance could still lead to the creation of additional legacy sites. (SECY-06-0143 page 5, A532). NRC Staff reasoned that the amount of additional financial assurance required may likely be underestimated "because of uncertainties associated with the burial performance and potential releases of contamination, transport of contamination in the subsurface environment, cleanup costs of subsurface contamination, and future disposal costs." Id. NRC Staff concluded that it would develop a rule and associated guidance to prevent future legacy sites. Id. at 6, A533.

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Despite these articulated concerns about storing radioactive waste, potential contamination of the environment, and ultimate cleanup and disposal costs, SECY-06-0143 went on to

acknowledge the proposal of the new LTC license in Draft Supplement 1 to NUREG-1757 and stated that the NRC's procedure for issuing the LTC license would simply be to amend the operating license. Id. However, the availability of the LTC license will make the option of onsite disposal of long-lived nuclides more available since it can be used in lieu of Federal or State control and ownership of the site. Thus, despite NRC Staff's concern in SECY-06-0143 about potential releases from onsite disposals that exist for only short time periods while the facility continues to operate, Staff still discussed with approval the new LTC license for decommissioning facilities that conduct onsite disposal of waste that will remain a radiological hazard for long time-frames and long after the facility has ceased to operate.

Because NRC Staff's analyses in SECY-03-0069 and SECY-06-0143 were used to develop Draft Supplement 1, which was eventually inserted into NUREG-1757 largely unchanged, NUREG-1757 currently contains the same inconsistencies as the SECY documents.

As the LTR's restricted release option and the LTC license were being developed, the NRC was well aware that Shieldalloy Metallurgical Corporation was accumulating large quantities of long-lived radioactive waste at its facility in Newfield, New Jersey. Shieldalloy had been conducting smelting and alloy production at its site in Newfield since 1940. 71 Fed. Reg. at 66986. Shieldalloy processed ore to produce ferrocolumbium, an

additive and conditioner used in the production of speciality steel and super alloy additives. Id. The resulting radioactive waste from Shieldalloy's operations is considered source material licensed and regulated by the NRC and contains thorium-232, which has a half-life of over 14 billion years, and uranium-238, which has a half-life of over 4 billion years. (Goodman Dec.<sup>4</sup> ¶2, A778-A779; Decommissioning Plan page 68, A562; Bernard Shleien, Lester A. Slaback, Jr., Brian Kent Birky, eds. Handbook of Health Physics and Radiological Health, 3d ed. Page 8-4, A777).

To date, Shieldalloy has accumulated approximately 65,800 cubic meters of radioactive waste at its facility. (Decommissioning Plan page 176, A563). To provide an idea of the massive quantities involved, an average sized refrigerator is approximately one cubic meter. The waste is being stored without any cover behind a chain link fence. Shieldalloy's own sampling of soil and water from the Hudson Branch Creek, which runs through a portion of the facility, shows radioactive contamination. (Decommissioning Plan, maps 6, 7, 8, A564-A566). Homes, businesses, and a farm are located immediately adjacent to the Shieldalloy facility, including one home which is located 100 feet from the property. (Decommissioning Plan page xxii, A560).

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On November 18, 1992, Shieldalloy and the NRC held a

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<sup>4</sup>The Declaration of Jenny Goodman was submitted with the State's Hearing Request on NUREG-1757 and is therefore part of the record.

meeting in which Shieldalloy expressed its interest in disposing its radioactive waste onsite upon decommissioning its facility. (NRC Memorandum dated Dec. 9, 1992, page 2, A333). The reason Shieldalloy gave for onsite disposal was that the world-wide recession and foreign imports have made adhering to strict environmental regulations more difficult. Id. at 1, A332. This meeting was held seven months prior to the NRC's initiation of the public process to amend the LTR to allow for the restricted release option for decommissioning. 58 Fed. Reg. at 33570.

On April 7, 1993, Shieldalloy submitted a conceptual decommissioning plan to the NRC which sought to permanently dispose of its radioactive waste at its Newfield facility. (SMC letter dated October 24, 2005, Exh. A458). The plan was submitted two months prior to the NRC's initiation of the public process to allow for the restricted release option. 58 Fed. Reg. at 33570.

Shieldalloy has since ceased manufacturing operations at Newfield, and on August 30, 2002, it filed a decommissioning plan with the NRC seeking permanently to dispose of the radioactive waste at its Newfield facility. On February 28, 2003, the NRC rejected the plan on the basis that it lacked sufficient information and technical analysis. (NRC Letter dated Feb. 28, 2003, A375-A383). Among the deficiencies, Shieldalloy stated in its plan that the local or State government would take ownership of the site even though Shieldalloy never actually obtained their

commitment. Id. at 7, A381. NRC Staff stated: "Although SMC proposed eventually transferring their site ownership to some local or state government entity, the DP [decommissioning plan] did not discuss the capability or willingness by any government entity to accept this responsibility in perpetuity." Id. (emphasis added). Thus, as of February 2003, NRC Staff was expecting the entity responsible for maintaining controls at the decommissioned site to endure to perpetuity.

NRC Staff continued to meet with Shieldalloy. On May 6, 2003, NRC Staff held a public meeting with Shieldalloy in which they discussed a possession-only license as constituting the institutional controls for onsite disposal. (NRC letter dated May 6, 2003, A384). The possession-only license for long-term care was discussed between NRC Staff and Shieldalloy in this meeting and in subsequent meetings, monthly phone conferences, and letters. (NRC letter dated July 2, 2003, A390; Shieldalloy letter dated Sept. 11, 2003, A393). NRC Staff discussed the possession-only license for long-term care as an option for Shieldalloy even though such a license would not be proposed to the public until September 2005 in Draft Supplement 1 to NUREG-1757. (See NUREG-1757 vol. 1 page xiii, A69; 70 Fed. Reg. 56940.)

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On May 15, 2004, the NRC issued an interim guidance document written specifically for Shieldalloy in which the NRC for the first time ever proposed the LTC license. (NRC Interim

Guidance for Shieldalloy, dated May 15, 2004, A395-A409). This guidance document proposed the LTC license even before it was made available to the general public on the NRC's website in Draft Supplement 1 to NUREG-1757 in September 2005. While the NRC's interim guidance for Shieldalloy concedes that the LTC license will need to be permanent based on the long-half life of Shieldalloy's radioactive waste, id. at 10, A405, the document still offers the LTC license as an option even though neither Shieldalloy nor any other private entity can be expected to endure to perpetuity to enforce the LTC license. Furthermore, the document goes on to recommend that the engineered barrier only needs to endure for 1,000 years, id. at 6, A401, and the document states that financial assurance is only required for "routine maintenance," not reconstructing the engineered barrier every 1,000 years, id. at 14, A409.

On October 21, 2005, Shieldalloy submitted a second decommissioning plan. On January 26, 2006, the NRC rejected this plan because of various technical problems and lack of information within the decommissioning plan. (Letter dated Jan. 26, 2006, A461-A465). NRC Staff continued to conduct various meetings and phone conferences with Shieldalloy prior to the plan's submission, and NRC Staff provided comments to draft chapters of the plan. Id., A461. In rejecting the second decommissioning plan, NRC Staff stated that "[w]e are particularly concerned that, regardless of

these additional measures that have been taken to enable SMC [Shieldalloy] to submit an acceptable DP [decommissioning plan],” the plan still must be rejected. Id.

On June 30, 2006, Shieldalloy submitted a revised decommissioning plan. On October 18, 2006, the NRC deemed this plan administratively complete. 71 Fed. Reg. 66986. On November 17, 2006, the NRC published a notice requiring that hearing requests on the decommissioning plan be submitted by January 16, 2007. Id. The State of New Jersey filed a request for a hearing, along with Gloucester County Board of Chosen Freeholders, the County of Cumberland, and two residents of Newfield. 72 Fed. Reg. 4048.

## SUMMARY OF THE LEGAL ARGUMENT

### Point I

The AEA requires the NRC to promulgate rules or regulations when setting forth the information an applicant for a license is required to submit or when the NRC establishes the form and conditions of a license. 42 U.S.C. §§ 2232(a), 2233. The NRC failed to comply with these statutory requirements by instead providing the LTC license in a guidance document titled NUREG-1757 and setting forth in NUREG-1757 the information an applicant for the LTC license is required to submit. The Court should therefore require the NRC to rescind these portions of NUREG-1757.

### Point II

A. The NRC acted arbitrarily and capriciously when it provided the LTC license and legal agreement and restrictive covenant ("LA/RC") for the purpose of complying with the institutional controls requirement for radioactive waste containing long-lived nuclides. It is self-evident that a private entity, even if it is subject to the terms of a LTC license or LA/RC, cannot endure perpetually to maintain site restrictions and engineered barriers for a decommissioned site containing long-lived radioactive waste. It is also self-evident that financial assurance posted today cannot be expected to provide a source of income to

maintain site restrictions and engineered barriers perpetually.

B. The NRC acted arbitrarily and capriciously by allowing applicants seeking to decommission their facility to model radioactive doses for only 1,000 years, regardless of whether the radioactive waste will remain a hazard well beyond 1,000 years.

C. The NRC acted arbitrarily and capriciously by allowing applicants seeking to decommission their facility to apply very high discount rates over long-time periods to the value of radiation doses averted to future generations. These discount rates render the health and safety of future generations inconsequential.

D. The NRC acted arbitrarily and capriciously by allowing applicants seeking to decommission their facility to assume a 1% investment rate on their financial assurance over 1,000 years. It is self-evident that returns and maintenance costs for a decommissioned site are unpredictable over the course of 1,000 years.

### Point III

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The NRC acted arbitrarily and capriciously when it failed to conduct an Environmental Impact Statement on NUREG-1757's environmental consequences. Specifically, NUREG-1757 will likely

create permanent radioactive waste sites containing long-lived nuclides throughout the country. The NRC is required to assess the cumulative impact of these additional sites.

#### Point IV

The AEA requires the NRC to grant a hearing in any proceeding for the issuance or modification of rules and regulations dealing with the activities of licensees. Because NUREG-1757 has the effect of modifying the rules and regulations dealing with the activities of licensees, the NRC should be required to grant the State a hearing.

## LEGAL ARGUMENT

### Point I

THIS COURT SHOULD DIRECT THE NRC TO RESCIND THE LTC LICENSE BECAUSE THE NRC FAILED TO CONDUCT RULEMAKING.

The NRC is required to promulgate rules or regulations when setting forth the information an applicant for a license is required to submit or when the NRC establishes the form and conditions of a license. The NRC may not use guidance documents, such as NUREG-1757, in taking these actions. The NRC should therefore be required to rescind the LTC license provisions of NUREG-1757. The standard of review is whether the agency action is "not in accordance with law." Dep't of Env'tl. Conservation v. EPA, 540 U.S. 461, 496-97 (2004).

The AEA provides as follows:

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.

~~42 U.S.C. § 2232(a) (emphasis added). The AEA also provides the following: "Each license shall be in such form and contain such terms and conditions as the Commission may, by rule or regulation, prescribe to effectuate the provisions of this chapter." 42 U.S.C.~~

§ 2233 (emphasis added).

A rule or regulation imposes rights and obligations on a person or entity. Texaco, Inc. v. Federal Power Com., 412 F.2d 740, 744 (3d Cir. 1969). A rule or regulation creates a binding standard on an agency and the regulated public. Cabais v. Egger, 690 F.2d 234, 237 (D.C. Cir. 1982); Guadamuz v. Bowen, 859 F.2d 762, 767 (9th Cir. 1988).

In contrast, NUREG-1757 explicitly states that it is a guidance document that does not establish a binding norm. (NUREG-1757, vol. 1, page xvii, A73 ("This NUREG is not a substitute for NRC regulations, and compliance with it is not required.")). The NRC violated the AEA by creating a new license called LTC license through a guidance document, which enables licensees to apply for and receive an LTC license. Id. page 17-65, A227. NUREG-1757 impermissibly provides various terms and conditions that a LTC license would provide. Id. pages 17-65 to 17-66, 17-79 to 17-80, A227-A228, A241-A242. Furthermore, NUREG-1757 sets forth guidance on the information that an applicant should submit in an application for a LTC license. Id. pages 17-71 to 17-82, A233-A244; vol. 2 pages 2-4 to 2-15.

As discussed above, the LTC license is a major policy reversal for the NRC. Formerly, a decommissioning facility with radioactive waste that presents a long-term hazard could either dispose of the waste at a licensed waste disposal facility or the

decommissioning facility could conduct onsite disposal if the Federal or State government was willing to take control and ownership of the site. 62 Fed. Reg. at 39088, 39070 (Response to comment B.3.3); NUREG-1727, pages 16.5 n.2, 16.6, 16.11, A357, A358, A363. However, the NRC made this major policy reversal by simply slipping the LTC license into an amendment to an existing guidance document and posting the revised guidance document on its website at [www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757](http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1757).

The NRC made this major policy reversal without any rational analysis. As discussed above, NRC Staff's analysis of the LTC license is contradictory and irreconcilable. For example, with regard to the institutional controls required by the LTR for properties released under restricted conditions, NRC Staff's analysis in SECY-03-0069 reiterated the NRC's previous policies: "more stringent controls will be required for exposures beyond the 100-year period, 'such as legally enforceable deed restrictions and/or control backed up by State or local government control or ownership.'" (SECY 03-0069, Attachment 1, Pages 18 to 19, A507-A508). The document further stated that "[t]he controls should be expected to last as long as they are needed." Id. at 19, A508.

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The document states that higher-hazard materials or long-lived nuclides require more durable institutional controls. Id. at 31, A520. The most durable institutional controls are stated to be

Federal or State ownership and control of the site. Id. In contrast to these pronouncements, SECY-03-0069 also states that a new recommended option, the possession-only license, may be utilized in lieu of Federal or State ownership and control for sites containing long-lived nuclides. Id. at 25, A514. SECY-03-0069 states that "for long-lived radionuclides, the license would likely be permanent." Id. at 26, A515. SECY-06-0143, which contained NRC Staff's response to stakeholder comments to SECY-03-0069, contained similar irreconcilable contradictions as were contained in SECY-03-0069.

Because the NRC failed to conduct the required rulemaking before offering the LTC license, the NRC insulated itself from obvious public health and safety concerns. The NRC proposed the LTC license to constitute the institutional controls for onsite disposals of radioactive waste that present a long-term hazard. (NUREG-1757 vol. 1 pages 17-65 to 67, A227-A229). The LTC license would require the licensee, a private entity, to maintain engineered controls, fencing, signs, and access restrictions for as long as the radiological hazard exists, which in some cases would be forever. Id. It is self-evident that a private entity cannot be expected to endure for millions and even billions of years to maintain the requirements of the LTC license, and any financial assurance posted upon the decommissioning will not endure to maintain the decommissioned site to perpetuity. It is also self-

evident that an applicant should be required to conduct modeling for the duration that the site will remain a radioactive risk. See Nuclear Energy Inst. v. Environmental Prot. Agency, 373 F.3d 1251, 1273 (D.C. Cir. 2004). Because the NRC failed to conduct rulemaking, it only received twelve public comments on the LTC license. (Public Comments, A410-A457; SECY-06-0143, Enclosure 1, A538).

In light of the AEA's requirement to promulgate rules and regulations that set forth the information required to be submitted by a license applicant, 42 U.S.C. § 2232(a), and rules and regulations that set forth the form, terms and conditions of its licenses, 42 U.S.C. § 2233, the NRC should be required to rescind the LTC license provisions of NUREG-1757.

#### Point II

THE AMENDED PORTION OF NUREG-1757 CONCERNING THE LTC LICENSE, THE LA/RC, THE 1,000-YEAR MODELING, AND THE 1,000-YEAR INVESTMENT RATE IS ARBITRARY AND CAPRICIOUS.

Courts must set aside agency action, findings or conclusions that are arbitrary, capricious, an abuse of discretion, ~~or otherwise not in accordance with law.~~ 5 U.S.C. § 706(2)(a).

The arbitrary and capricious standard requires a searching inquiry into the facts to determine whether the agency action was based on a consideration of the relevant factors and determine that there

has been no clear error of judgment. Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402, 413-14, 416 (1971).

An agency rule will be arbitrary and capricious if the agency entirely fails to consider an important aspect of a problem, offers an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it cannot be ascribed to a difference in view or the product of agency expertise. Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43 (1983); NVE Inc. v. HHS, 436 F.3d 182, 190 (3d Cir. 2006) (stating standard elements and that reversal is appropriate where the administrative action is irrational or not based on relevant factors).

Unexplained inconsistency in action taken by the agency can be considered an arbitrary and capricious change from agency practice. Alaska Dep't of Env'tl. Conservation, 540 U.S. at 497 (2004). A sudden or unexplained change or a change that does not take account of legitimate reliance on prior interpretation may be considered arbitrary and capricious or an abuse of discretion. Smiley v. Citibank (S.D.), N.A., 517 U.S. 735, 740-41 (1996). An unexplained inconsistency was found by the Third Circuit to be arbitrary and capricious in Prometheus Radio Project v. FCC, 373 F.3d 372, 389-90 (3d Cir. 2004) (FCC found to have acted arbitrarily in replacing existing limits on media ownership with single set of limits and agency assumptions of market share were

unreasonable). The court said "an agency that departs from its 'former views' is 'obliged to supply a reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance' in order to survive judicial scrutiny under the APA." Id. at 390.

A. The LTC License and Legal Agreement and Restricted Covenant ("LA/RC"), as Institutional Controls for the Onsite Disposal of Waste Containing Long-Lived Nuclides, are Arbitrary and Capricious.

By issuing the LTC license and legal agreement and restricted covenant ("LA/RC"), the NRC changed long-standing policy that previously required governmental control and ownership over radioactive waste sites containing long-lived nuclides. The NRC made this change without conducting rulemaking, and instead, slipped changes into a guidance document titled NUREG-1757 and posted it on its website. Furthermore, NRC's history leading up to NUREG-1757 is fraught with inconsistencies. By allowing the LTC license or LA/RC in lieu of government ownership and control for sites containing long-lived nuclides, the NRC assumes that a private entity subject to one of these instruments can endure to maintain an engineered barrier and site restrictions to protect the public health and safety to perpetuity. The NRC's actions here are clearly arbitrary and capricious.

The LTR requires "legally enforceable institutional

controls that provide reasonable assurance that the TEDE [Total Effective Dose Equivalent] from residual radioactivity distinguishable from background to the average member of the critical group will not exceed" a specified level. 10 C.F.R. § 20.1403(b). NUREG-1757 provides new institutional controls for long-lived nuclides, the LTC license and the LA/RC, which would require the instrument holder to maintain site restrictions and engineered barriers. (NUREG-1757 vol. 1 page 17-65, A227.) NUREG-1757 allows a LTC license or a LA/RC to constitute the durable institutional controls in cases where the licensee could not arrange for State or Federal ownership and control of the site. (NUREG-1757 vol. 1 pages 17-65 to 67, A227-A229).

The NRC acted arbitrarily and capriciously by providing the LTC license and LA/RC as options for the institutional controls for long-lived nuclides. It is self-evident that a private entity will not endure for the thousands, millions, or billions of years, the amount of time that certain materials remain a radioactive hazard, to enforce and maintain the institutional controls required by the LTC license or the LA/RC. The only institutional control that can possibly endure over these long time frames is Federal or State ownership and control over the site. Although the LTR requires financial assurance, 10 C.F.R. 20.1403(c), it is also self-evident that an amount of financial assurance posted today cannot be expected to provide a continuous flow of funds over

thousands, millions, or billions of years into the future to maintain site restrictions and engineered barriers. By providing the LTC license for long-lived nuclides, NRC failed to comply with its mandate to protect the public health and safety. See 42 U.S.C. §§ 2012(d), 2013(d), 2099, 2201(b).

Prior to the introduction of the LTC license and the LA/RC, Federal or State ownership and control was expected to constitute the institutional control for long-lived nuclides. See 62 Fed. Reg. at 39070 (Response to comment B.3.3); SECY-02-0008 at 2-3, A467-A468; NUREG-1727 at 16.5 n.2, 16.6, 16.11, A357, A358, A363). This policy was consistent with the requirement of Federal or State ownership and control of the site for disposal facilities that are licensed to accept low-level radioactive waste from other persons, 10 C.F.R. §61.59(a), high-level radioactive waste disposal facilities, 42 U.S.C. §10131(a)(4), (a)(5), and uranium and thorium recovery facilities, 42 U.S.C. §2113(b)(1)(A).

In September 2005, the NRC committed a complete reversal in policy and practice without any rulemaking or rational analysis when it proposed to allow decommissioning facilities to leave their long-lived nuclides without Federal or State control and ownership of the site. It was then that the NRC issued Draft Supplement 1 to NUREG-1757, which proposed the LTC license and LA/RC. (NUREG-1757 vol. 1 page 17-65, A227). Because the NRC made this major policy change without any rulemaking, the NRC received only twelve public

comments on Draft Supplement 1. (Public Comments, A410-A457; SECY-06-0143, Enclosure 1, A410).

As discussed above, the NRC analyses of these new institutional controls are completely contradictory. For example, in SECY-03-0069, NRC Staff reiterated the NRC's previous response to public comments on the LTR and previous NRC policies: "more stringent controls will be required for exposures beyond the 100-year period, 'such as legally enforceable deed restrictions and/or control backed up by State or local government control or ownership.'" (SECY 03-0069, Attachment 1, Pages 18 to 19, A507-A508). The document further stated that "[t]he controls should be expected to last as long as they are needed." Id. at 19, A508. The document states that higher-hazard materials or long-lived nuclides require more durable institutional controls. Id. at 31, A520. The most durable institutional controls are stated to be Federal or State ownership and control of the site. Id.

In contrast to these pronouncements, SECY-03-0069 also states that a new recommended option, the possession-only license, may be utilized in lieu of Federal or State ownership and control for sites containing long-lived nuclides. Id. at 25, A514. SECY-03-0069 states that "for long-lived radionuclides, the license would likely be permanent." Id. at 26, A515. The same inconsistencies are contained in SECY-06-0143 which responded to stakeholder comments to SECY-03-0069. SECY-06-0143 contained

similar irreconcilable contradictions. Because NRC Staff's analyses in SECY-03-0069 and SECY-06-0143 were used to develop the amended sections of NUREG-1757, it currently contains the same inconsistencies as the SECY documents. (Compare NUREG-1757 vol. 1 page 13-3, A89 with pages 17-65 to 67, A227-A229).

Courts have overturned NRC determinations that are irrational or without support. San Luis Obispo Mothers for Peace v. NRC, 449 F.3d 1016, 1030 (9th Cir. 2006) (rejecting the NRC's determination that the possibility of a terrorist attack on a nuclear facility is too remote and speculative to warrant consideration under NEPA); Limerick Ecology Action, Inc. v. NRC, 869 F.2d 719, 741 (3d Cir. 1989) (rejecting the NRC's claim that a severe accident at the Limerick nuclear reactor is remote and speculative); People against Nuclear Energy v. NRC, 678 F.2d 222, 228-29 (D.C. Cir. 1981) rev'd on other grounds sub. nom. Metropolitan Edison Co. v. People Against Nuclear Energy, 460 U.S. 766, 103 S. Ct. 1556, 75 L. Ed. 2d 534 (1983) (rejecting the NRC finding that it was unable to determine "with any degree of certainty whether the psychic distress associated with continued operation of the TMI 1 facility is sufficiently susceptible of measurement to permit a meaningful assessment of the phenomenon").

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Courts have held that an agency that significantly alters its policy must provide a rational basis for the change. Citizens Awareness Network, supra, 59 F.3d at 291. In Citizens Awareness

Network, the NRC's position had been that "major dismantling and other activities that constitute decommissioning under the NRC's regulations must await NRC approval of a decommissioning plan." Id. at 288. Then, under cover of a Staff Requirements Memo, the NRC began to allow dismantling and disposal of significant portions of the Yankee nuclear power plant prior to submission and approval of a decommissioning plan without any reasoned, articulated basis for the change. Id. at 289, 291-92. The court prevented the NRC from changing its policy because it had provided no rational basis for the change.

In the case at bar, the NRC has not provided a rational basis for the allowing the LTC license and LA/RC in lieu of government ownership and control of a decommissioned site containing long-lived nuclides. In fact, as discussed above, the analysis that the NRC did provide actually contradicted this changed policy.

In Alaska Dep't of Env'tl. Conservation, supra, 540 U.S. at 487-88, the EPA's determination of the best available air pollution control technology was considered arbitrary and capricious because it was based on inconsistent findings of economic feasibility.

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It seems that the arbitrary and capricious action of providing the LTC license and LA/RC stemmed from years of working with a small number of companies seeking to leave their long-lived

radioactive waste on-site upon decommissioning, including Shieldalloy. (SECY-02-0008 page 3, A468). On November 18, 1992, Shieldalloy and the NRC held a meeting in which Shieldalloy expressed its interest in disposing its radioactive waste onsite upon decommissioning its facility. (NRC Memorandum dated Dec. 9, 1992, page 2, A333). This meeting was held seven months prior to the NRC's initiation of the public process to amend the LTR to allow for the restricted release option for decommissioning. 58 Fed. Reg. at 33570. Shieldalloy continued to submit conceptual and actual decommissioning plans to the NRC which sought to permanently dispose of its radioactive waste at its Newfield facility. (SMC letter dated October 24, 2005, A458; NRC Letter dated Feb. 28, 2003, A375-A383). NRC Staff continued to communicate with Shieldalloy about leaving the waste behind at the facility. (NRC letter dated May 6, 2003, A384). In fact, NRC Staff discussed the option of a possession-only license in lieu of governmental ownership and control even though the possession-only license for long-term care was not yet proposed to the public in Draft Supplement 1 to NUREG-1757. (NRC letter dated July 2, 2003, A390; Shieldalloy letter dated Sept. 11, 2003, A393).

On May 15, 2004, the NRC issued an interim guidance document written specifically for Shieldalloy in which the NRC for the first time ever proposed the LTC license. (NRC Interim Guidance for Shieldalloy, dated May 15, 2004, A395-A409). This

guidance document proposed the LTC license even before it was made available to the general public on the NRC's website in Draft Supplement 1 to NUREG-1757 in September 2005.

The NRC's inconsistent and irrational policies were created by making special rules for a few facilities, including Shieldalloy. The court in Citizens Awareness Network similarly overturned an NRC policy made specifically to accommodate a single licensee. 59 F.3d at 288-89, 291.

B. The 1,000-Year Modeling is Arbitrary and Capricious for waste that will Remain a Radiological Hazard Well After 1,000 Years.

NUREG-1757 requires decommissioning facilities seeking to leave their radioactive waste at the site to model the health and safety risks for only 1,000 years, regardless of whether the materials remain a radioactive hazard well after 1,000 years. (NUREG-1757 vol. 1 pages 17-87 to 17-88, A249-A250).

The LTR requires an applicant for decommissioning to calculate the radioactive dose within the first 1,000 years after decommissioning. 10 C.F.R. § 20.1401(d). However, this provision does not prevent the NRC from requiring modeling after 1,000 years ~~if the applicant possesses long-lived nuclides. In fact, NRC stated~~ in its response to public comments that this regulation is intended to only apply to short-lived nuclides. 62 Fed. Reg. at 39083 (Response F.7.3). For long-lived nuclides, future calculations

beyond 1,000 years would be required. Id. NUREG-1757's 1,000-year modeling, regardless of the duration of the radioactive hazard, is not adequate to protect the public health and safety from materials containing long-lived nuclides. (Goodman Dec. ¶3, A779). The LTR requires applicants to demonstrate through modeling that radiation doses will be below a certain limit. 10 C.F.R. §20.1403(b). It is possible that a site's radiation doses may be under the LTR's dose limit at 1,000 years but then peak to a dose that exceeds the limit after 1,000 years. (Goodman Dec. ¶3, A779). NUREG-1757 therefore renders the LTR's dose limits for long-lived nuclides as meaningless after 1,000 years. See 10 C.F.R. §20.1403. The NRC therefore has acted arbitrarily and capriciously by reversing its policy of requiring modeling beyond 1,000 years without any rationale. Furthermore, NRC's policy to ignore the public health and safety after 1,000 years violates the AEA. See 42 U.S.C. §§ 2012(d), 2013(d), 2099, 2201(b).

With regard to the disposal of other long-lived radioactive materials, namely spent nuclear fuel, the court in Nuclear Energy Inst., supra, 373 F.3d at 1273, overturned an EPA regulation that set the compliance assessment at only 10,000 years. EPA initially used a 10,000 year assessment, in part, because this was the time frame used for the disposal of other long-lived hazardous materials. Id. at 1268. However, because the National Academy of Science estimated that peak radiation risks from spent

nuclear fuel may not occur until hundreds of thousands of years after disposal, id. at 1267, and because the compliance assessment should be based on the nuclear waste's peak dosage, the court required that the assessment period be one million years, id. at 1273. The court cited that one of the goals in establishing a compliance assessment is "consistent policies for managing various kinds of long-lived, hazardous materials." Id. at 1267.

This Court should therefore require the NRC to rescind the 1,000-year modeling provisions in NUREG-1757 and require modeling consistent with the particular duration of the hazard posed by the radioactive material which is to be disposed of.

C. NUREG-1757's Arbitrary and Capricious Use of a Discount Rate Over 1,000 Years Renders Future Generations Valueless in Determining Whether to Further Reduce Residual Radioactivity for a Decommissioning Site.

The LTR requires decommissioning facilities to demonstrate that residual radioactivity will be reduced to levels that are as low as reasonably achievable ("ALARA"). 10 C.F.R. §§ 20.1402, 20.1403(a). The LTR defines ALARA as

making every reasonable effort to maintain exposures to radiation as far below the dose limits in this part as is practical consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and

safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public interest.

10 C.F.R. §20.1003.

NUREG-1757 instructs facilities to conduct the ALARA analysis by comparing the monetary value of averted radiation doses in the future from disposing radioactive materials offsite with the monetary value of the costs of removing the materials. (NUREG-1757 vol. 2 page N-15, A323). Thus, a particular level of radioactive waste removal only needs to be undertaken if its benefits exceed the costs. Id. NUREG-1757 uses \$2,000 for each rem averted for each person in the future. Id. at N-4, N-15, N-16, A312, A323, A324. However, this cost-benefit analysis is particularly troubling because NUREG-1757 discounts the dollar amount of future doses averted by 7% for each year during the first 100 years and 3% for each year thereafter to compare the present costs of removing radioactive material. Id. at N-4, A312.

"Discounting is a procedure developed by economists in order to evaluate investments that produce future income. The case for discounting begins with the observation that \$100 received today is worth more than \$100 received next year, even in the ~~absence of inflation~~" because the money received today can begin accruing interest if it is invested. Frank Ackerman and Lisa Heinzerling, Pricing the Priceless: Cost-Benefit Analysis of Environmental Protection, 150 U. Pa. L. Rev. 1553, 1559 (2002).

However, when a discount rate is applied to benefits far into the future, the discount rate model begins to break down. "At a discount rate of five percent, for example, the death of a billion people 500 years from now becomes less serious than the death of one person today." Id. at 1571. "[A] discount rate equal to 5% or more and a time horizon of 100 years or more leads to a present value of 0. Thus any benefit cost analysis comparing present costs with benefits to future generations of more than 100 years will never pass a cost-benefit test." Neill, H. and Neill, R. Perspectives on Radioactive Waste Disposal: A Consideration of Economic Efficiency & Intergenerational Equity page 6 (WM'03 Conference, February 23-27, 2003), A768.

Thus, NUREG-1757's use of such high discount rates for long-lived nuclides, 7% over the first 100 years and 3% thereafter, renders the health and safety and future generations inconsequential and effectively bypasses the LTR requirement that residual radioactivity be ALARA. See 10 C.F.R. §§ 20.1402, 20.1403(a). Use of these discount rates for waste containing long-lived nuclides will skew the ALARA analysis in favor of on-site disposal. Economists generally agree that a discount rate should not be applied over long-time frames. See, e.g., Neill, pages 6, 8 (A768, 770) (Based on a survey of twenty preeminent economists, develops a sliding-scale discount rate which declines to 0% for environmental effects beyond 300 years.); Ackerman and Heinzerling,

150 U. Pa. L. Rev. at 1570-73; Martin Weitzman, Gamma Discounting, 91 Am. Econ. Rev. 260, 261 (March 2001) (Based on a survey of 2,160 economists, develops a sliding-scale discount rate which declines to 0% for environmental effects beyond 300 years.). Thus, NRC's use of the discount rate renders the ALARA analysis meaningless after just 100 years and therefore circumvents the LTR's requirement to "mak[e] every reasonable effort to maintain exposures to radiation as far below the dose limits in this part as is practical." 10 C.F.R. §20.1003. Ignoring the public health and safety benefits of reducing radiation after just 100 years also violates the AEA. See 42 U.S.C. §§ 2012(d), 2013(d), 2099, 2201(b).

Furthermore, the NRC failed to provide any rationale for these high discount rates. The NRC should be prohibited from allowing use of the discount rate over such long-time periods. See Natural Resources Defense Council v. Herrington, 768 F.2d 1355, 1413-14 (D.C. Cir. 1985) (overturning the Department of Energy's use of a discount rate because it failed to present a sufficient justification for the rate used).

D. NUREG-1757's Provisions Regarding Financial Assurance are Arbitrary and Capricious because it Fails to Provide Sufficient Funds to Maintain a Decommissioning Site Containing Long-Lived Nuclides.

NUREG-1757's provisions concerning financial assurance are arbitrary and capricious and violate the LTR's requirement for applicants seeking restricted release decommissioning to post "sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site." See 10 C.F.R. § 20.1403(c).

NUREG-1757 allows applicants seeking the restricted release option to assume a 1% rate of return on the financial assurance, even for sites containing long-lived nuclides. (NUREG-1757 vol. 1 page 17-82, A244).

It is self-evident that an investment rate should not be assumed over long time frames. Whereas it is reasonable to use an investment rate in the short-term because an investment can obtain predictable returns and maintenance costs for a decommissioned site are more certain, these factors are less predictable over the course of 1,000 years. A fixed amount of financial assurance posted today cannot provide a constant source of money to perpetuity to maintain site restrictions and engineered barriers at a decommissioned site containing long-lived radioactive waste. Thus, NUREG-1757 violates 10 C.F.R. § 20.1403(c) and the AEA's mandate to

protect the public health and safety by failing require an adequate level of financial assurance for long-lived nuclidies. See 42 U.S.C. §§ 2012(d), 2013(d), 2099, 2201(b).

The NRC failed to give any justification for using a 1% investment rate, except to analogize to the 1% investment rate allowed for uranium mill tailings sites. (NUREG-1757 vol. 1 page 17-82, A244.) However, the NRC also failed to give any justification for the tailings sites. See 45 Fed. Reg. 65521 (Oct. 3, 1980). The NRC has not provided an explanation for how this assumption of a 1% rate of return will meet the regulatory requirement of 10 C.F.R. 20.1403(c) that there be sufficient funds to allow a third party to step in and assume control and maintenance responsibilities. This Court should therefore require the NRC to rescind use of the investment rate for financial assurance.

### Point III

THE NRC VIOLATED THE NATIONAL ENVIRONMENTAL POLICY ACT WHEN IT FAILED TO CONDUCT AN ENVIRONMENTAL IMPACT STATEMENT FOR THE COMPLETELY NEW LTC LICENSE AND FOR CERTAIN OTHER PROVISIONS OF NUREG-1757.

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The National Environmental Policy Act ("NEPA") requires all federal agencies to prepare a detailed EIS for any proposed major federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(1)(C). To demonstrate that an

action will significantly affect the quality of the human environment, the plaintiff must allege facts which, if true, show that the proposed project may significantly degrade some human environmental factor. Sierra Club v. US Forest Service, 843 F.2d 1190, 1193 (9<sup>th</sup> Cir. 1988). "If substantial questions are raised whether a project may have a significant effect upon the human environment, an EIS must be prepared." Id. (quoting Foundation for North American Wild Sheep v. U.S. Dep't of Agriculture, 681 F.2d 1172, 1177-78 (9<sup>th</sup> Cir. 1982)).

Normally, when the NRC plans to issue a license amendment or take some other form of regulatory action that requires NEPA compliance, it will conduct an environmental analysis ("EA") stating that there is no significant impact of the proposed action or conduct an EIS reviewing the impact of the proposed action and listing alternatives. 10 C.F.R. §§ 51.20, 51.21. When considering a licensee's request to decommission, the NRC prepares a supplemental EIS for the post-operating license stage or an EA updating the prior environmental review for the facility. 10 C.F.R. §51.95(b). Thus, at a minimum, pursuant to its own NEPA procedures, the NRC should have conducted an EA for its proposed action establishing the LTC license to determine whether there was a significant impact from its action and demonstrate that it considered alternatives. The NRC's own regulations require it to consider the environmental effects of the proposed action; the

impacts of alternatives to the proposed action and alternatives available for reducing or avoiding adverse environmental effects. 10 C.F.R. § 51.71(d); Limerick Ecology Action, supra, 869 F.2d at 725. The standard of review is whether the agency's decision not to conduct an EIS is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." DOT v. Pub. Citizen, 541 U.S. 752, 763 (2004).

The effects of NUREG-1757 represent a marked change in policy and practice for the NRC that has raised substantial questions as to the nature and effect of the new licensing program. (See Part II(A) above). NUREG-1757 involves the first program to allow the long-term disposal of long-lived radioactive waste without government control and ownership of the site at decentralized locations throughout the country. This new program certainly presents uncertain and unknown risks. See id. NUREG-1757 makes it easier for licensees to leave their long-lived radioactive waste at the facility upon decommissioning, which will have cumulative impacts at the various potential sites. (Goodman Dec. ¶ 4, A779-A780. See also Point II(A) above). Therefore, the LTC license guidance significantly affects the human environment, and an EIS should have been prepared.

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The NRC's determination that the creation of the LTC license did not require preparation of an EIS was unreasonable. In judging reasonableness, the court must look at whether the agency's

decision was "fully informed and well-considered." Vermont Yankee Nuclear Power Corp. v. National Resources Defense Council, Inc., 435 U.S. 519, 558 (1978). The only role of the court is to insure that the agency took a "hard look" at the environmental consequences of its actions. Kleppe v. Sierra Club, 427 U.S. 390, 410 n.21 (1976). Rather than taking a hard look at the consequences of this program, the NRC took only a cursory look. The NRC's failure to prepare an EIS was arbitrary and capricious and unreasonable. See Nevada v. Dept. of Energy, 457 F.3d 78, 87-88 (D.C. Cir. 2006) (citing Marsh v. Or. Natural Res. Council, 490 U.S. 360, 376 (1989)) (APA's arbitrary and capricious standard applies to a NEPA challenge).

The NRC purportedly will conduct site-specific environmental analyses when licensees proceed under NUREG-1757 to decommission their facilities. However, the NRC cannot avoid the requirements of NEPA by segmenting the LTC license program into individual sites. See, e.g., Sierra Club, supra, 843 F.2d at 1193 (Forest Service's decision not to prepare an EIS for nine timber sales contracts was found to be unreasonable where the environmental assessments it had prepared for individual contracts did not discuss the factors to determine whether the action significantly affects the human environment). "Segmentation of a large or cumulative project into smaller components in order to avoid designating the project a major federal action has been held

to be unlawful." Susquehanna Valley Alliance v. Three Mile Island Nuclear Reactor, 619 F.2d 231, 240 (3<sup>rd</sup> Cir. 1980) (footnote and citations omitted).

The NRC failed to analyze and set forth a detailed statement of the environmental impacts of the agency's decision to create an entirely new license for long term storage of radioactive waste as required by NEPA. Specifically, the generic environmental impact statement prepared before implementation of the LTC license did not consider the environmental impacts of permanent disposal of long-lived nuclides at various widespread locations. Nor did it consider the overall effect of allowing such storage without the previously required institutional controls, including federal or state ownership of the property. Scientific analysis of important questions such as whether the type of radioactive materials to be covered by the LTC license should be stored collectively or individually, and whether the materials might be more safely stored under geographic or climate conditions found in certain regions of the country, is precluded by the ad hoc approach taken by the NRC. If the NRC is permitted to rely solely on site-specific environmental analyses, many critical environmental impacts, such as the effect of contamination of groundwater and soil at multiple sites as opposed to concentration in just one site, will be ignored and possible alternatives will not be considered. The alternative that should be considered is requiring waste to be disposed at the

waste disposal facilities currently licensed by The NRC. The broader economies of scale for costs and risks should be considered along with the relative convenience of administering only a few larger sites. Moreover, the risk to public safety as well as the risk to the environment posed by terrorist attack are greatly increased with dispersed disposal facilities rather than a centralized site. See, e.g., San Luis Obispo Mothers for Peace, supra, 449 F.3d at 1035 (consideration of the environmental consequences of terrorist attacks is required under NEPA).

The NRC failed to evaluate the cumulative impact of licensing facilities all over the country to store long-lived nuclides which will remain radioactive for literally billions of years. The extent and severity of these cumulative effects should not be the subject of speculation. "The purpose of an EIS is to obviate the need for such speculation by insuring that available data are gathered and analyzed prior to the implementation of the proposed action." Sierra Club, supra, 843 F.2d at 1195. In this case, the NRC should prepare a programmatic EIS to reflect the "broad environmental consequences attendant upon [its] wide-ranging federal program" which is "likely to generate disparate yet related impacts." Nevada v. Dept. of Energy, 457 F.3d 78, 91-92 (D.C. Cir. 2006).<sup>5</sup> A programmatic EIS should be required where actions are

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<sup>5</sup> This "tiering approach" requires an agency to prepare a programmatic EIS and subsequent site-specific environmental analyses. 40 C.F.R. § 1508.28 (quoted in Nevada, 457 F.3d at

"'connected,' 'cumulative,' or 'sufficiently similar' that a programmatic EIS is 'the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions.'" Id. at 92 (quoting 40 C.F.R. §1508.25(a)). See also Natural Resources Defense Council v. NRC, 539 F.2d 824, 844-45 (2d Cir. 1976) (viewing cumulative environmental impact of interim licensing decisions as a whole, plutonium utilization licenses represented commitment of resources to widespread program and constituted major federal action under NEPA). A programmatic EIS is the only way for the NRC to adequately assess the combined and cumulative environmental impacts of the LTC license program and consider alternatives to the program. By relying solely on site-specific evaluations, the NRC neglects the impact of the program as a whole. The NRC should therefore be required to assess the cumulative impact of NUREG-1757, just as it considered the cumulative impact of allowing restricted release under the LTR in 1997 through its generic environmental impact statement. See 62 Fed. Reg. at 39069 (Section B.3.2).

There is little in the record in this case to support the NRC's decision to implement the long-term control license program, which presents far reaching and potentially adverse environmental consequences from establishing long term nuclear waste disposal sites at disparate locations without an EIS.

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90).

Having failed to show that it adequately considered and disclosed the environmental impacts of its actions and that its decision was not arbitrary and capricious, the NRC's implementation of the LTC license guidance should be remanded for such consideration. Id. (citing Balt. Gas & Elect. Co. v. NRDC, 462 U.S. 87, 97-98 (1983)).

Point IV

THE STATE OF NEW JERSEY IS ENTITLED TO A HEARING BEFORE THE NRC ON NUREG-1757.

The NRC's January 12, 2007 Order denied the State's request for a hearing on NUREG-1757 on the ground that NUREG-1757 is non-binding guidance, not a rule or regulation dealing with the activities of licensees.<sup>6</sup> (A327-A331). The Commission's denial of a hearing should be reversed.

The AEA provides that "in any proceeding for the issuance or modification of rules and regulations dealing with the activities of licensees, . . . the Commission shall grant a hearing upon the request of any person . . . ." 42 U.S.C. § 2239(a) (1) (A). An agency action that has the effect of changing a regulation or other existing law entitles a person to a hearing on that action. Citizens Awareness Network, supra, 59 F.3d at 292-93. In Citizens Awareness, the court held that the NRC's policy shift involving an interpretation of an ambiguous regulation required the NRC to grant a hearing pursuant to 42 U.S.C. § 2239(a) (1) (A). 59 F.3d at 292-93. The standard of review is whether the agency action is "not in accordance with law." Alaska Dep't of Env'tl. Conservation v. EPA, 540 U.S. 461 (2004).

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<sup>6</sup>The NRC's other ground for denying a hearing, that the State might intervene in the Shieldalloy decommissioning proceeding, has been addressed at length in the State's Brief in Opposition to the pending Motion to Dismiss.

Because NUREG-1757 makes available a completely new license (See Parts I and II(A)) and it provides new standards for decommissioning facilities concerning modeling (See Part II(B)), and financial assurance (See Part II(D)), NUREG-1757 clearly alters existing the NRC regulations and policies dealing with the activities of licensees. The NRC therefore improperly denied the State's request for a hearing on NUREG-1757. (See NRC Hearing denial, A327-A331).

**CONCLUSION**

The State of New Jersey respectfully requests that the Court require the NRC to rescind the LTC license on the basis that rules or regulations are required before providing a new license. New Jersey also requests the Court to require the NRC to rescind provisions of NUREG-1757 concerning the LTC license, LA/RC, 1,000-year modeling, and use of discount rates for the ALARA analysis and investment rates for financial assurance on the basis that they are arbitrary and capricious and they violate the AEA. Because the NRC failed to conduct an EIS prior to implementing the Long Term Control license, this Court should require the NRC to rescind the Long Term Control license until the agency meets NEPA requirements. Finally, the NRC should be required to grant New Jersey's request for a hearing on NUREG-1757.

Respectfully submitted,

ANNE MILGRAM  
ATTORNEY GENERAL OF NEW JERSEY

Dated: July 3, 2007

By: /s/  
Andrew D. Reese  
Deputy Attorney General

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**CERTIFICATION OF BAR MEMBERSHIP**

I certify that on July 2, 2007, I sent a completed application for membership to the bar to the Clerk of the U.S. Court of Appeals for the Third Circuit pursuant to 3rd Cir. LAR 46.1.

/s/  
Andrew D. Reese  
Deputy Attorney General

Dated: July 3, 2007

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/s/  
Andrew D. Reese  
Deputy Attorney General

Dated: July 3, 2007

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On this day I caused two copies of the brief and one copy of the appendix to be mailed by UPS Next Day Air upon the following counsel of record:

Kathryn E. Kovacs  
U.S. Department of Justice  
Environment & Natural Resources Division  
Appellate Section  
PO Box 23795  
Washington, DC 20026

Charles E. Mullins  
Office of the General Counsel  
U.S. Nuclear Regulatory Commission  
11555 Rockville Pike  
Rockville, MD 20852-2738

Joseph J. McGovern, Esq.  
Parker McCay, P.A.  
Three Greentree Centre  
7001 Lincoln Drive West  
PO Box 974  
Marlton, NJ 08053-0974

Matias F. Travieso-Diaz, Esq.  
Pillsbury Winthrop Shaw Pittman LLP  
2300 "N" Street, NW  
Washington, DC 20037-1122

/s/

Andrew D. Reese  
Deputy Attorney General

Dated: July 3, 2007

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I certify that the text of the paper copies of this brief and the text of the PDF version of this brief filed electronically with the Court today are identical.

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Andrew D. Reese  
Deputy Attorney General

Dated: July 3, 2007

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Andrew D. Reese  
Deputy Attorney General

Dated: July 3, 2007