RAS 13063

February 12, 2007

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
SHIELDALLOY METALLURGICAL CORPORATION	)	Docket No. 40–7102–MLA
	)	ASLBP No. 07–852–01–MLA–BD01
(License Amendment Request for Decommissioning the Newfield Facility)	)	
	)	
	)	

SHIELDALLOY'S ANSWER TO PETITION FOR HEARING OF STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

On January 16, 2007, the State of New Jersey Department of Environmental Protection ("Petitioner" or "NJDEP") filed a "Petition for Hearing and to Intervene on Shieldalloy's Decommissioning Plan" ("Petition"). A copy of the Petition was served by express mail on Shieldalloy Metallurgical Corporation ("Shieldalloy" or the "Licensee"). Pursuant to 10 C.F.R. § 2.309(h)(1), Shieldalloy submits this answer ("Answer") in opposition to the Petition.

The Petition fails to propose any contentions that meet the admissibility requirements of 10 C.F.R. § 2.309(f). Accordingly, Petitioner's request for hearing should be denied and its Petition should be dismissed. 10 C.F.R. § 2.309(a).[1]

I. PROCEDURAL BACKGROUND

The Petition seeks a hearing on the Decommissioning Plan ("DP") for Source Material License No. SMB–743 issued to Shieldalloy for its Newfield Facility in Newfield, New Jersey

[1] Should a hearing be held, however, because another intervenor has submitted an admissible contention, Petitioner – being a governmental entity – might participate in the hearing, if it so chooses, as an "interested state" pursuant to 10 C.F.R. 2.315(c).

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("the Newfield Plant"). Shieldalloy resubmitted the DP to the NRC on October 24, 2005.[2] Shieldalloy submitted a supplement to the DP on June 30, 2006 ("DP Supplement," ADAMS Accession no. ML061980092) (also referred to herein as "DP Rev. 1a"). The DP was accepted for review by the NRC Staff on November 9, 2006. The NRC provided an opportunity for "any person whose interest may be affected by this proceeding and who desires to participate as a party [to] file a written request for a hearing and a specification of the contentions which the person seeks to have litigated in the hearing." *Notice of Consideration of Amendment Request for Decommissioning for Shieldalloy Metallurgical Corporation, Newfield, NJ and Opportunity to Request a Hearing*, 71 Fed. Reg. 66,986 (Nov. 17, 2006) ("Notice").

II. STANDING

NJDEP asserts that it is automatically entitled to standing in this proceeding because the Newfield Plant is located within New Jersey's borders, and cites 10 C.F.R. §§ 2.309 (d)(2)(i) and (ii). Petition at 1. This assertion is incorrect. State, local governments and affected Indian Tribes "that wish to be a party in a proceeding for a *facility* located within its boundaries need not address the standing requirements." 10 C.F.R. §2.309(d)(2)(i), emphasis added. "Facility" is defined as "a production facility or utilization facility as defined in § 50.2 of this chapter." 10 C.F.R. § 2.4. A "production facility" is defined in 10 C.F.R. § 50.2 as

> (1) Any nuclear reactor designed or used primarily for the formation of plutonium or uranium-233; or
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> (2) Any facility designed or used for the separation of the isotopes of plutonium, except laboratory scale facilities designed or used for experimental or analytical purposes only; or

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[2] The DP filed by Shieldalloy in October 2005 (ADAMS No. ML053190212) was the culmination of a process that developed over the previous thirteen years. (Citations to the October 2005 version are given herein as "DP.") Shieldalloy submitted a conceptual decommissioning plan on April 7, 1993. The initial version of the DP was submitted on August 30, 2002.

> (3) Any facility designed or used for the processing of irradiated materials containing special nuclear material, except (i) laboratory scale facilities designed or used for experimental or analytical purposes, (ii) facilities in which the only special nuclear materials contained in the irradiated material to be processed are uranium enriched in the isotope U-235 and plutonium produced by the irradiation, if the material processed contains not more than 10^{-6} grams of plutonium per gram of U-235 and has fission product activity not in excess of 0.25 millicuries of fission products per gram of U-235, and (iii) facilities in which processing is conducted pursuant to a license issued under parts 30 and 70 of this chapter, or equivalent regulations of an Agreement State, for the receipt, possession, use, and transfer of irradiated special nuclear material, which authorizes the processing of the irradiated material on a batch basis for the separation of selected fission products and limits the process batch to not more than 100 grams of uranium enriched in the isotope 235 and not more than 15 grams of any other special nuclear material.

The same regulation defines "utilization facility" as "any nuclear reactor other than one designed or used primarily for the formation of plutonium or U-233." 10 C.F.R. § 50.2. The Newfield Plant is not a "production or utilization facility" under those definitions, but is licensed under 10 C.F.R. Part 40 as a source material licensee; therefore, the presumptive standing provisions in 10 C.F.R. §2.309(d)(2) do not apply to government entities, such as Petitioner, seeking to participate in an NRC licensing proceeding regarding the Newfield Plant. Therefore, Petitioner needs to affirmatively show that it has standing to be a participant herein.

While Petitioner has failed to make such an affirmative showing, Shieldalloy does not object to Petitioner having standing. Pursuant to a 1997 settlement incorporated into an Order under which Shieldalloy emerged from bankruptcy, Shieldalloy established a $4.25 million line of credit in favor of the State of New Jersey and the United States. "Settlement Agreement of Environmental Claims and Issues By and Between the Debtors and the United States of America and the State of New Jersey," DP Supplement, Appendix K., ¶ 16.A. The settlement agreement grants the State of New Jersey certain rights and obligations with respect to the utilization of those funds to implement the DP. The role of New Jersey under the bankruptcy settlement

agreement with regard to utilization of the funds used to implement the DP confers it standing to participate in this proceeding if it meets the other requirements for intervention set forth in 10 C.F.R. §2.309. As will be shown below, Petitioner fails to meet those requirements.

III. NRC STANDARDS GOVERNING THE ADMISSIBILITY OF CONTENTIONS

The Commission's rules for admissibility of contentions in NRC licensing proceedings are clear and controlling. Under 10 C.F.R. § 2.309(f)(1)[3] a hearing request or petition to intervene "must set forth with particularity the contentions sought to be raised." To satisfy this requirement, Section 2.309(f)(1) specifies that each contention must:

(i) Provide a specific statement of the issue of law or fact to be raised or controverted;

(ii) Provide a brief explanation of the basis for the contention;

(iii) Demonstrate that the issue raised in the contention is within the scope of the proceeding;

(iv) Demonstrate that the issue raised in the contention is material to the findings the NRC must make to support the action that is involved in the proceeding;

(v) Provide a concise statement of the alleged facts or expert opinions which support the requestor's/petitioner's position on the issue and on which the petitioner intends to rely at hearing, together with references to the specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue; and

(vi) Provide sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact. This information must include references to specific portions of the application (including the applicant's environmental report and safety report) that the petitioner disputes and the supporting

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[3] In 2004 the Commission revised its procedural rules governing adjudicatory proceedings. *See Final Rule, Changes to Adjudicatory Process*, 69 Fed. Reg. 2,182, 2,217 (Jan. 14, 2004). 10 C.F.R. § 2.309(f)(1) is one of the provisions added by the revised rules, although a similar provision existed in the earlier version of the rules in 10 C.F.R. § 2.714(b)(2).

> reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief.

10 C.F.R. §§ 2.309(f)(1)(i)-(vi). The purpose of the contention rule is to "focus litigation on concrete issues and result in a clearer and more focused record for decision." 69 Fed. Reg. at 2.202. The Commission has stated that it "should not have to expend resources to support the hearing process unless there is an issue that is appropriate for, and susceptible to, resolution in an NRC hearing." *Id.* The Commission has also stated that the "contention rule is strict by design," having been "toughened . . . in 1989 because in prior years 'licensing boards' had admitted and litigated numerous contentions that appeared to be based on little more than speculation.'" *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-01-24, 54 NRC 349, 358 (2001) (citation omitted).

These pleading standards governing the admissibility of contentions are the result of a 1989 amendment to 10 C.F.R. § 2.714, now § 2.309, which was intended "to raise the threshold for the admission of contentions." *Final Rule, Rules of Practice for Domestic Licensing Proceedings – Procedural Changes in the Hearing Process*, 54 Fed. Reg. 33,168 (Aug. 11, 1989); *see also Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2 and 3), CLI-99-11, 49 NRC 328, 334 (1999); *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155-56 (1991). The pleading standards are to be enforced rigorously. "If any one . . . is not met, a contention must be rejected." *Id.* at 155 (citation omitted). A licensing board is not to overlook a deficiency in a contention or assume the existence of missing information. *Id.*

The Commission has explained that this "strict contention rule" serves multiple purposes, which include putting other parties on notice of the specific grievances and assuring that full

adjudicatory hearings are triggered only by those able to proffer at least some minimal factual and legal foundation in support of their contentions. *Oconee*, CLI-99-11, 49 NRC at 334. By raising the threshold for admission of contentions, the NRC intended to obviate lengthy hearing delays caused in the past by poorly defined or supported contentions. *Id.* As the Commission reiterated in incorporating these same standards into the revised Part 2 rules, "[t]he threshold standard is necessary to ensure that hearings cover only genuine and pertinent issues of concern and that issues are framed and supported concisely enough at the outset to ensure that the proceedings are effective and focused on real, concrete issues." 69 Fed. Reg. at 2,189-90.

Failure to satisfy any of the admissibility requirements in 10 C.F.R. § 2.309(f)(1) must result in rejection of a proffered contention. *Private Fuel Storage, L.L.C.* (Independent Spent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999). Failure to proffer at least one admissible contention requires that a request for hearing or petition to intervene be denied. 10 C.F.R. § 2.309(a).

A. Contentions Must Have an Adequately Articulated Basis

A "brief explanation of the basis for the contention" is a necessary prerequisite of an admissible contention. 10 C.F.R. § 2.309(f)(1)(ii). "[A] petitioner must provide some sort of minimal basis indicating the potential validity of the contention." 54 Fed. Reg. at 33,170. This "brief explanation" of the logical underpinnings of a contention does not require a petitioner "to provide an exhaustive list of possible bases, but simply to provide sufficient alleged factual or legal bases to support the contention." *Louisiana Energy Services, L.P.* (National Enrichment Facility), CLI-04-35, 60 NRC 619, 623 (2004). The brief explanation helps define the scope of a contention – "[t]he reach of a contention necessarily hinges upon its terms coupled with its stated bases." *Public Serv. Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-899, 28

NRC 93, 97 (1988), *aff'd sub nom. Massachusetts v. NRC,* 924 F.2d 311 (D.C. Cir. 1991); *see also Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-14, 48 NRC 39, 41 (1998). ("It is the responsibility of the Petitioner to provide the necessary information to satisfy the basis requirement for the admission of its contentions").

B. Contentions Must be Within the Scope of the Proceeding, Must be Material to the Findings the NRC Must Make, and May Not Challenge NRC's Rules

10 C.F.R. §§ 2.309(f)(1)(iii) and (iv) require that a petitioner demonstrate that the issue raised by each of its contentions is within the scope of the proceeding and material to the findings that the NRC must make. Licensing boards "are delegates of the Commission" and, as such, they may "exercise only those powers which the Commission has given [them]." *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-316, 3 NRC 167, 170 (1976) (footnote omitted); *accord, Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-90 n.6 (1979). A contention is not cognizable unless the issues it raises fall within the scope of the proceeding for which the Commission has delegated jurisdiction to the licensing board, as set forth in the Notice of Opportunity for Hearing. *Id.; see also Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-825, 22 NRC 785, 790-91 (1985); *Commonwealth Edison Co.* (Zion Station, Units 1 and 2), ALAB-616, 12 NRC 419, 426-27 (1980); *Commonwealth Edison Co.* (Carroll County Site), ALAB-601, 12 NRC 18, 24 (1980).

An issue is only "material" if "the resolution of the dispute would make a difference in the outcome of the licensing proceeding." 54 Fed. Reg. at 33,172. This means that there must be some link between the claimed error or omission regarding the proposed licensing action and the NRC's role in protecting public health and safety or the environment. *Dominion Nuclear*

Connecticut, Inc. (Millstone Nuclear Power Station, Units 2 and 3), LBP-04-15, 60 NRC 81, 89 (2004), *aff'd,* CLI-04-36, 60 NRC 631 (2004).[4]

It is also well established that a petitioner may not raise contentions that merely attack NRC requirements or regulations. *Oconee*, CLI-99-11, 49 NRC at 334. "[A] licensing proceeding . . . is plainly not the proper forum for an attack on applicable statutory requirements or for challenges to the basic structure of the Commission's regulatory process." *Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20, *aff'd in part on other grounds*, CLI-74-32, 8 AEC 217 (1974) (footnote omitted). A contention whose import is to attack a Commission rule or regulation is not appropriate for litigation and must be rejected. 10 C.F.R. § 2.335(a); *Potomac Electric Power Co.* (Douglas Point Nuclear Generating Station, Units 1 and 2), ALAB-218, 8 AEC 79, 89 (1974); *Peach Bottom*, ALAB-216, 8 AEC at 20. Also, a contention that "advocate[s] stricter requirements than those imposed by the regulations" is "an impermissible collateral attack on the Commission's rules" and must be rejected. *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), LBP-82-106, 16 NRC 1649, 1656 (1982); *see also, Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), LBP-91-19, 33 NRC 397, 410, *aff'd in part and rev'd in part on other grounds*, CLI-91-12, 34 NRC 149 (1991). Likewise, a contention that seeks to litigate a generic determination established by Commission rulemaking is "barred as a matter of law." *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-93-1, 37 NRC 5, 30 (1993).

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[4] As observed by the Commission, this materiality requirement is consistent with judicial decisions, such as *Conn. Bankers Ass'n v. Bd. of Governors*, 627 F.2d 245, 251 (D.C. Cir. 1980), which held that: "[A] protestant does not become entitled to an evidentiary hearing merely on request, or on a bald or conclusory allegation that . . . a dispute exists. The protestant must make a minimal showing that material facts are in dispute, thereby demonstrating that an 'inquiry in depth' is appropriate" (footnote omitted)

C. Contentions Must Be Specific and be Supported by Facts or Expert Opinion

Admissible contentions "must explain, with specificity, particular safety or legal reasons requiring rejection of the contested [application]." *Millstone*, CLI-01-24, 54 NRC at 359-60. A contention is admissible only if it provides a "specific statement of the issue of law or fact to be raised or controverted," together with a "concise statement of the alleged facts or expert opinion" supporting the contention and "specific sources and documents on which the requestor/petitioner intends to rely to support its position on the issue." 10 C.F.R. §§ 2.309(f)(1)(i), (v).

In accordance with these requirements, it is the obligation of the petitioner to present the factual information or expert opinions necessary to support its contention adequately. *Yankee Atomic Electric Co.* (Yankee Nuclear Power Station), CLI-96-7, 43 NRC 235, 262 (1996). Failure to do so requires that the contention be rejected. *Palo Verde*, CLI-91-12, 34 NRC at 155. Under these standards, a petitioner is obligated "to provide the [technical] analyses and expert opinion" or other information "showing why its bases support its contention." *Georgia Institute of Technology* (Georgia Tech Research Reactor, Atlanta, Georgia), LBP-95-6, 41 NRC 281, 305, *vacated in part and remanded on other grounds*, CLI-95-10, 42 NRC 1, *aff'd in part*, CLI-95-12, 42 NRC 111 (1995). Where a petitioner has failed to do so, "the [Licensing] Board may not make factual inferences on [the] petitioner's behalf." *Id., citing Palo Verde*, CLI-91-12, 34 NRC 149.

A contention, therefore, is not to be admitted "where an intervenor has no facts to support its position and where the intervenor contemplates using discovery or cross-examination as a fishing expedition which might produce relevant supporting facts." 54 Fed. Reg. at 33,171. As the Commission has emphasized, the contention rule bars contentions where petitioners have what amounts only to generalized suspicions, hoping to substantiate them later, or simply a

desire for more time and more information in order to identify a genuine material dispute for litigation. *Duke Energy Corp.* (McGuire Nuclear Station, Units 1 and 2), CLI-03-17, 58 NRC 419, 424 (2003). Therefore, under the Rules of Practice, a statement "that simply alleges that some matter ought to be considered" does not provide a sufficient basis for an admissible contention. *Sacramento Municipal Utility District* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 246 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994). Similarly, a mere reference to documents provides no basis for a contention. *Baltimore Gas & Electric Co.* (Calvert Cliffs Nuclear Power Plant, Units 1 and 2), CLI-98-25, 48 NRC 325, 348 (1998). With respect to expert opinions, "an expert opinion that merely states a conclusion (*e.g.*, the application is 'deficient,' 'inadequate,' or 'wrong') without providing a reasoned basis or explanation for that conclusion is inadequate because it deprives the Board of the ability to make the necessary reflective assessment of the opinion. . .'" *USEC Inc.* (American Centrifuge Plant), CLI-06-10, 63 NRC 451, 472 (2006) (quoting *Private Fuel Storage L.L.C.* (Independent Spent Fuel Storage Installation), LBP-98-7, 47 NRC 142, 181 (1998)).

D. Sufficient Information to Show that a Genuine Dispute Exists

An admissible contention must include "sufficient information to show that a genuine dispute exists with the applicant/licensee on a material issue of law or fact," which showing must include "references to specific portions of the application . . . that the petitioner disputes and the supporting reasons for each dispute, or, if the petitioner believes that the application fails to contain information on a relevant matter as required by law, the identification of each failure and the supporting reasons for the petitioner's belief." 10 C.F.R. § 2.309(f)(1)(vi). Making a "bald or conclusory allegation that such a dispute exists" is not sufficient. A petitioner "must make a minimal showing that material facts are in dispute, thereby demonstrating that an 'inquiry in

depth' is appropriate." 54 Fed. Reg. at 33,171 (quoting *Connecticut Bankers Ass'n,* 627 F.2d at 251.

E. Contentions Can Not Ignore Publicly Available Documentation Regarding the Requested Licensing Action

NRC's pleading standards require a petitioner to read the pertinent portions of the licensing request and supporting documents, state the applicant's position and the petitioner's opposing view, and explain why it has a disagreement with the applicant. 54 Fed. Reg. at 33,170; *Millstone*, CLI-01-24, 54 NRC at 358. Indeed, an intervenor

> [h]as an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable the petitioner to uncover any information that could serve as the foundation for a specific contention. Neither Section 189a of the Atomic Energy Act nor [the corresponding Commission regulation] . . . permits the filing of a vague, unparticularized contention, followed by an endeavor to flesh it out through discovery against the applicant or Staff.

54 Fed. Reg. at 33,170 (1989) (*quoting Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-687, 16 NRC 460, 468 (1982), *vacated in part on other grounds*, CLI-83-19, 17 NRC 1041 (1983)). A contention should be rejected if it inaccurately describes an applicant's proposed actions or misstates the content of the licensing documents. *See, e.g., Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Units 1 and 2), LBP-82-119A, 16 NRC 2069, 2076 (1982); *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), LBP-32-107A, 16 NRC 1791, 1804 (1982); *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-82-43A, 15 NRC 1423, 1504-05 (1982).

If the petitioner does not believe the licensing request and supporting documentation address a relevant issue, the petitioner is "to explain why the application is deficient." 54 Fed. Reg. at 33,170; *see also Palo Verde*, CLI-91-12, 34 NRC at 156. A contention that does not

directly controvert a position taken by the applicant in the license application is subject to dismissal. *See Texas Utilities Electric Co.* (Comanche Peak Steam Electric Station, Unit 2), LBP-92-37, 36 NRC 370, 384 (1992). An allegation that some aspect of a license application is "inadequate" or "unacceptable" does not give rise to a genuine dispute unless it is supported by facts and a reasoned statement of why the application is unacceptable in some material respect. *Florida Power & Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 and 4), LBP-90-16, 31 NRC 509, 521 & n.12 (1990).

IV. PETITIONER HAS NOT SUBMITTED AN ADMISSIBLE CONTENTION

The Petition raises a total of thirty-three contentions challenging the DP. Sixteen contentions are presented in Part I of the Petition as "Technical Contentions" and one is included in Part III as a "Miscellaneous Contention." In addition, the sixteen "Technical Contentions" are repeated *verbatim* in Part II of the Petition as "Environmental Contentions." *Compare* Petition at 2-89 *with* Petition at 90-177. However, no separate environmental claims are asserted by NJDEP in the sixteen contentions included in Part II.

No response to the "Environmental Contentions" appears therefore to be necessary. The responses in this Answer to the seventeen "Technical" and "Miscellaneous" claims in Parts I and III address any environmental issues that may be included in NJDEP's contentions.[5] Those responses are incorporated by reference as Licensee's responses to the contentions in Part II.

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[5] Apparently, the duplication of "Technical" and "Environmental" claims in the Petition is the result of the following instructions in the Notice:

> Each contention shall be given a separate numeric or alpha designation within one of the following groups:
>
> 1. Technical—primarily concerns issues relating to matters discussed or referenced in the Safety Evaluation Report for the proposed action.
>
> 2. Environmental—primarily concerns issues relating to matters discussed or referenced in the Environmental Report for the proposed action.
>
> 3. Miscellaneous—does not fall into one of the categories outlined above.

Footnote continued on next page

All seventeen contentions raised by Petitioner are inadmissible. They raise impermissible challenges to the NRC rules and regulations. The contentions often lack specificity and basis. Some contentions are not backed by expert testimony, reference no supporting documentation and are devoid of factual support. Expert opinions, when offered, are conclusory and devoid of supporting analysis. In all, the contentions proffered by Petitioner fail to raise a genuine dispute with the Licensee on any material issue of fact or law. Accordingly, none of the contentions satisfies the above described requirements of 10 C.F.R. § 2.309(f)(1).

A. Contention 1 (Transport of Radionuclides to the Groundwater)

Petitioner's Contention 1 asserts:

> The soil on which Shieldalloy proposes to site the radioactive waste will allow radionuclides to contaminate the groundwater.

Petition at 2. The contention challenges the NRC regulations and fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi), hence it is inadmissible.

1. Contention 1 impermissibly challenges the NRC regulations

The specific claim raised in Contention 1, as described by Petitioner, is that "disposal of Radioactive waste should not be conducted in this area because the radionuclides will easily infiltrate the relatively thin layer of soil (the vadose zone) and enter the underlying groundwater." Petition at 2, *citing* 10 C.F.R. § 2.309(f)(1)(i)[6]. This claim is based on the

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If the requester/petitioner believes a contention raises issues that cannot be classified as primarily falling into one of these categories, the requester/petitioner must set forth the contention and supporting bases, in full, separately for each category into which the requester/petitioner asserts the contention belongs with a separate designation for that category.

Notice, 71 Fed. Reg. at 66987.

[6] The Petition incorrectly cites to "10 C.F.R. § 2.309(f)(1)." This error is repeated throughout the Petition.

erroneous proposition that *any* discharge of radionuclides into the groundwater is impermissible.[7] However, NRC regulations allow radioactive releases, within specified limits, to be discharged via various pathways, including groundwater. 10 C.F.R. § 20.1402 states:

> A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE [total effective dose equivalent] to an average member of the critical group that does not exceed 25 mrem (0.25 mSv) per year, *including that from groundwater sources* of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA).

10 C.F.R. § 20.1402, emphasis added. Moreover, a site may be deemed acceptable for restricted use (the type of use sought for the Newfield Plant) if

> (a) The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of § 20.1402 would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA.

10 C.F.R. § 20.1403(a). Thus, the NRC regulations allow releases to the groundwater from a restricted use site resulting in a TEDE to an average member of the population which, combined with the contributions from the releases from other pathways, does not exceed 25 mrem per year and is ALARA. Contention 1 challenges the provisions in 10 C.F.R. § 20.1403 and is therefore inadmissible. 10 C.F.R. § 2.335(a).

2. Contention 1 does not controvert the DP

In describing how Contention 1 raises a genuine dispute with Shieldalloy on a material issue of law or fact, Petitioner makes the following three arguments:

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[7] As the basis for Contention 1, Petitioner states that "[t]he LLRWPA requires 'the permanent isolation of low-level radioactive waste pursuant to the requirements established by the Nuclear Regulatory Commission under applicable laws . . . .'" Petition at 2. Clearly, Petitioner misconstrues the *definition* of "disposal" in the Low-Level Radioactive Waste Policy Amendments Act of 1985, 42 U.S.C. § 2021b *et seq.* ("LLWRPA"), which refers to "permanent isolation" of radioactive waste as "requiring" complete containment of radioactivity and thus prohibiting any radioactive releases to the groundwater. Likewise, in its discussion of how Contention 1 gives rise to a genuine dispute with Licensee, Petitioner concludes with the assertion that "the DP should be rejected because of the likelihood of groundwater contamination. Malusis Report pages 4 – 9." Petition at 9.

- That the DP underestimates the saturated hydraulic conductivity of the layer of native soil under the slag pile (the "vadose zone") and as a result underestimates the rate at which water that infiltrates through the waste material will also infiltrate through the vadose zone and into the saturated zone of the soil that lies beneath the vadose zone. Petition at 7-8.

- That the DP excludes consideration of the groundwater on the basis that it is presently contaminated, citing DP § 5.2.2.2.4. *Id.* at 8.

- That the DP improperly failed to consider contamination of the Hudson Branch stream since it is fed by groundwater discharge in times of no or low precipitation. *Id.* 8-9.

The first argument misconstrues the DP analysis, for it is based on the following erroneous understanding: "The DP appears to justify the onsite disposal under these conditions upon the ability of the vadose zone and saturated zone soils to provide attenuation." Petition at 5. In fact, the DP Supplement (at Appendix D) contains a detailed analysis that shows that the rate of radionuclide transport of any releases from the insoluble slag to the groundwater and from there to a well one-hundred feet from the engineered encapsulated pile would be very slow and would have no significant radiological impact on hypothetical receptors. Shieldalloy letter to the NRC dated June 30, 2006 submitting Revision 1a to the DP, ADAMS Accession No. ML061980092, Attachment 1 at 5 and DP Supplement at Appendix D.[8]

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[8] Petitioner challenges Shieldalloy's analyses, claiming that a "distribution coefficient" K_d used in the analyses is wrong and the proper K_d to be used should be essentially zero because the underlying soils are mostly sand and gravel. Petition at 7-8. Petitioner provides no reference for this assertion. However, NRC guidance regards even higher K_d values than that used by Shieldalloy as conservative. "In general, licensees or responsible parties may estimate the values of K_d through laboratory column or batch sorption measurements [e.g., ASTM methods D4319 (ASTM 2002), D4646 (ASTM 2001), and D4874 (ASTM 2001)] or by using a conservative value to

Footnote continued on next page

The second argument raised in this Contention is also erroneous. While it correctly points out that *one reason* the DP excludes consideration of the groundwater is that groundwater is already contaminated and not fit for consumption,[9] that reason is not the *only* reason. Although not included as part of the DP, Shieldalloy performed site-specific groundwater modeling in the Supplement to the DP that showed that the groundwater pathway, even if included, would have no significant radiological impact on hypothetical receptors. DP Supplement, Attachment 1 at 5.

Finally, the Petition asserts that "Shieldalloy should have considered contamination of the Hudson Branch stream" and notes that surface water of the Hudson Branch is sometimes fed by groundwater. Petition at 6. The Petition does not contradict the DP in this respect, however, because Shieldalloy does consider potential groundwater discharge to the Hudson Branch (ER at 3-16 and 3-20), existing radiological impacts to the Hudson Branch (DP at 29, 134-135), and potential radiological impacts to the groundwater quality. *See e.g.*, DP at 29-30, 134-135; ER at 3-16 and 3-20; and DP Supplement at Appendix D. In addition, as noted in ER Section 3.4.2.2 at

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represent the values of K_d from available literature references [e.g., Sheppard and Thibault (1990) and NUREG/CR–5512, Volume 3]." NUREG-1757, Vol. 2, Rev. 1, Appendix F. The value of 48 L/kg value used as input to the groundwater pathway modeling is lower than that specified as conservative by the NRC for sandy soil. Table 1 from Sheppard and Thibault, 1990 (the K_d listed for radium in sandy soil is 500 L/kg). There is no technical justification for the Petition's assertion that K_d approaching zero is appropriate; therefore, Petitioner has not identified a material dispute with Shieldalloy.

Petitioner also challenges the value of hydraulic conductivity of 0.017 meters per year given in Section 5.2.2.2.3 of Rev. 1a of the DP (at p. 39). Petition at 7. Indeed, the cited value was erroneously placed in that section. Hydraulic conductivity was not used in any of the dose modeling performed for Chapter 5 of the DP, because the groundwater pathway was deemed inapplicable to the SMC site. DP, Section 19.5. When site-specific modeling was performed to demonstrate that inclusion of the groundwater pathway would not add significantly to the dose estimates, an assumption of hydraulic conductivity of 22,250 meters per year (200 feet per day) was used. DP Supplement, Appendix D at 3. That value is 40 % higher, and thus more conservative, than the 16,000 meters per year called for by Petitioner.

[9] Lack of consideration of a groundwater exposure pathway is justified because NUREG-1757 allows for an evaluation of the suitability of groundwater for drinking based on a comparison of the groundwater quality to drinking water standards. In accordance with this guidance, the groundwater is not potable since it is heavily contaminated with hexavalent chromium, trichloroethylene and other toxic substances. DP Supplement, Appendix C at 12 and NUREG-1757, -Vol. 2, Rev. 1, Appendix M.5.2.1.4 at M-40.

3-28, the major local potable water providers (the Newfield Water Department and Vineland Water and Sewer Utility) obtain their potable water strictly from groundwater sources and would be expected to continue using groundwater resources in the future, as the Hudson Branch and other streams of the Maurice River watershed are typically shallow with low flow rates.

Table 17.8 of the DP summarizes the results of dose modeling and demonstrates that the DP meets the dose limits of the NRC regulations. Contention 1 does not controvert these dose assessments. The arguments it raises about groundwater contamination do not take into account, or fail to assess properly, the information in the DP. Accordingly, Contention 1 does not raise a genuine dispute with Shieldalloy on a material issue of law or fact and the contention is inadmissible on that ground also.

B. Contention 2 (Leachability)

Petitioner's Contention 2 asserts:

> The DP fails to acknowledge the leachability of radionuclides from the slag despite Shieldalloy's own tests showing that the radioactive waste will leach radionuclides from rainwater.

Petition at 9. The contention challenges the NRC regulations and fails to satisfy the requirements of 10 C.F.R. § 2.309 (f)(1)(vi) and is therefore inadmissible.

1. Contention 2 raises a challenge to the NRC regulations

Contention 2 acknowledges that the population would not be directly exposed to any radioactively contaminated leachate from the slag. Petition at 11, 15. The gravamen of the contention, however, is that the DP has underestimated the leachability of radionclides from the slag, and that a proper leachability assessment would "cause concern regarding potential degradation of the groundwater due to release of contaminants from the waste." Petition at 15. This contention therefore charges that the release of radioactive contaminants to the groundwater

should be absolutely prohibited. The discussion in response to Contention 1 above shows that no such prohibition exists. A claim that no releases to the groundwater should be allowed is an impermissible challenge to the provisions in 10 C.F.R. § 20.1403.

2. Contention 2 does not controvert the DP

Contention 2 raises the following arguments with respect to the leachability of radionuclides from the slag at the Newfield site:

- DP "places heavy reliance on the argument that the Radioactive Waste will resist leaching contaminants." Petition at 9.
- DP performed an insufficient number of leachability tests. *Id.* at 11-12.
- The leachability tests were of insufficient duration. *Id.* at 12-13.
- A referenced report by Dave [*sic*] Raviv Associates indicates uranium concentrations in the groundwater are higher than would be expected for the geographic location of the Newfield site and does not support the DP's statement that the radionuclides are bound tightly to the slag and will not leach into the groundwater. *Id.* at 14.

a. Reliance on leachability resistance

It is unclear what Petitioner means by "resisting" leaching contaminants. If Petitioner attributes to the DP a claim that the material in the slag will not leach, Petitioner's first argument in Contention 2 is just wrong. While the DP correctly notes that the material in the slag exhibits "marked resistance to leaching," DP Rev. 1a Section 5.3 at 41, it never asserts that the material does *not* leach. To the contrary, the DP considers that, because the slag is essentially insoluble, leaching, rather than dissolution of the slag, is the controlling mechanism for potential transport

of radioactivity to the environment. *Id.*, Section 5.4.3.3. at 78. Furthermore, the analysis of the potential radiological impacts on groundwater shown in the Supplement to the DP (Appendix D) not only acknowledges the potential for release and transport of radionuclides from the slag, but includes partition coefficients for those radionuclides in the modeling process.

b. Number of leachability tests

With respect to the number of tests conducted, the Petition states, "the number of leaching tests performed is insufficient to assess potential variability in the leaching behavior of the waste materials and establish statistical confidence that the test results are representative of the waste mass as a whole." Petition at 12. The Petition provides no support for the speculative assertion that there may be some significant variability in the leaching behavior of slag produced using procedures and feed materials that have not changed over the many years of ferrocolumbium production. Moreover, the DP reports that analyses of the radiological constituents in multiple slag samples demonstrate that their concentrations within the total volume of slag present in the Storage Yard of the Newfield Plant are consistent. DP Table 17.7, n.168. The Petition does not controvert this finding.

The Petition also asserts that additional sampling of baghouse dust, building materials, and soils for leaching should have been conducted. Petition at 12. The baghouse dust tests that Petitioner claims should have been conducted were "to evaluate the potential for leaching of non-radioactive contaminants (*e.g.*, heavy metals)." *Id.* Petitioner also claims that leachate from the slag and the baghouse dust, although tested for radionuclides, "should have also been analyzed for chemical contaminants *pursuant to RCRA* [Resource Conservation and Recovery Act, 42 U.S.C. § 6901 *et seq.*] to determine if they are hazardous waste and potentially banned from land disposal. . . . " *Id.*, emphasis added. However, the identification and control of non-radioactive

contaminants is outside the scope of the health and safety issues to be examined in this proceeding, for the NRC has jurisdiction only to license and regulate source material (i.e., uranium and thorium) as well as impose limits on radionuclide emissions. Non-radioactive materials are not regulated by the NRC and their potential release does not raise a cognizable health and safety issue herein. As was stated in the Statement of Considerations for the *Final Rule, Standards for Protection Against Radiation* with respect to

Proposed Section 20.1007, "Compliance with Environmental and Health Protection Regulations":

> *Final rule:* This section has a counterpart in the present part 20 and in the proposed rule (§ 20.1005) stating that meeting part 20 requirements does not remove the responsibility of licensees, when disposing of licensed radioactive materials, from meeting the requirements of other applicable Federal, State, and local regulations applicable to toxic or hazardous wastes.
>
> The advisory statement in the final rule has been expanded to cover all methods of waste disposal. This section of the rule is advisory and is not intended to imply that NRC will take enforcement action for violations of other environmental protection regulations issued under statutes other than the Atomic Energy Act.

56 Fed. Reg. 23,360 at 23,382 (May 21, 1991).[10] In fact, pursuant to a memorandum of understanding between the NRC and the U.S. Environmental Protection Agency ("EPA") it is the EPA that has the responsibility and jurisdiction to

> resolve any CERCLA concerns involving hazardous substances outside of NRC's jurisdiction at NRC licensed sites, including concerns involving hazardous constituents that are not under the authority of NRC. As provided in Section

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[10] This is not to say that the NRC has no authority under the National Environmental Policy Act ("NEPA") to evaluate the environmental impacts from non-radiological contaminants. It is quite clear that the NRC's authority under NEPA extends to both radiological and non-radiological contaminants. However, the claim in Contention 2 is that the DP is deficient because the leachate for the slag and baghouse dust should have been analyzed pursuant to RCRA "to determine if they are hazardous waste and possibly banned from land disposal." Petition at 12. Banning site disposal of waste under RCRA is beyond the scope of the NRC's regulatory authority. *See* MOU and *Final Rule, Radiological Criteria for License Termination*, 62 Fed. Reg. 39,058, 39,084 (July 21, 1997).

> V.D.2, EPA under CERCLA will defer or consult with NRC as appropriate regarding matters involving AEA materials under NRC's jurisdiction.

Memorandum of Understanding Between the Environmental Protection Agency and the Nuclear Regulatory Commission -- Consultation and Finality on Decommissioning and Decontamination of Contaminated Sites, dated October 9, 2002 ("MOU"), ADAMS No. ML022830208 and at http://www.nrc.gov/reading-rm/doc-collections/news/2002/mou2fin.pdf, Section D.4. Therefore, the claim that additional tests should have been conducted to identify chemical contaminants for potential compliance with the RCRA is outside the scope of this proceeding.

Likewise, Petitioner asserts that the TCLP [Toxicity Characteristic Leaching Procedure] tests conducted by Shieldalloy showed high values of radium in the leachate. With respect to the TCLP test results for radium, such test results while referenced in the DP (Section 4.4.1 at n.50) were not used for dose assessment purposes in the DP. Instead, the distribution coefficient (K_d) was estimated for the various radionuclides in the slag, and those results were used as input to the dose modeling for the groundwater pathway shown in Appendix D of the Supplement to the DP. Thus, the results of TCLP testing are irrelevant to the analyses and conclusions in the DP.

Also, as discussed above, regulation of non-radiological contaminants such as barium is outside the regulatory scope of this proceeding, because the NRC has jurisdiction only to license and regulate source materials. Other materials such as barium are not regulated by the NRC and their potential release does not raise a cognizable health and safety issue herein.[11]

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[11] In any event, the claims raised in the Petition with respect to leaching of barium are erroneous. The Petition seeks to compare EP Toxicity barium results for slag from 1987 to drinking water MCLs. The Petition provides no rationale for comparing barium EP Toxicity levels to MCLs. In fact, the Petition admits that "the population would not be directly exposed to undiluted leachate." Petition at 15. Furthermore, the measured levels of barium in the groundwater at the site, as characterized by groundwater sampling conducted at the Newfield facility in 1990 and 1991, are below the MCLs. DP Supplement, Appendix C, Tables 2 and 3.

c. Duration of the leachability tests

The third area of criticism raised in Contention 2 is that the durations of the TCLP tests were insufficient to allow the leaching process to reach completion. Petition at 13. However, Shieldalloy did not use the results of TCLP tests for the dose modeling. Instead, site-specific K_d values were determined for the slag. DP Appendix 19.4. These K_d values for radium, uranium and thorium were the ones used as input to the groundwater pathway analysis in Appendix D to the Supplement for transport modeling. No values derived from TCLP testing were used as inputs to the dose modeling. *See* DP Table 17.5, nn.164-166. Thus, the Petition's criticism of the TCLP tests is irrelevant to the analysis and results presented in the DP.

Finally, the Petition asserts that the DP's position that radionuclides are tightly bound in the slag is not supported by groundwater data. Petition at 14. The Petition states that "[t]he concentration of uranium in the Kirkwood-Cohansey aquifer is typically 0.03 micrograms per liter (ug/L) according to the US Geological Survey. Uranium-238 concentrations in the report (Appendix 19.2) are three orders of magnitude above that level." *Id.* However, the US Geological Survey report cited by Petitioner shows considerable variation in groundwater uranium concentrations near the Newfield facility, noting that concentrations are highest where the Bridgeton Formation outcrops and there is agricultural land. *Natural Radioactivity in, and Inorganic Chemistry of, Ground Water in the Kirkwood-Cohansey Aquifer System, Southern New Jersey, 1983-89*, USGS 92-4144 at 33 (1995), available at http://pubs.er.usgs.gov/usgspubs/wri/wri924144 ("USGS Report").[12] Thus, the general background levels in the aquifer in the area cited by Petitioner do not accurately characterize

[12] The Petition does not explicitly identify the USGS report that it relies on. Shieldalloy presumes NJDEP is referring to the USGS Report referenced here based on experience.

general background levels around the Newfield Plant site.[13] Furthermore, the DP reports site-specific groundwater data from samples collected in 2005 that show uranium concentrations in the area of the slag pile that are indistinguishable from local background. DP Section 4.7 at 30; ER Appendix F. These results are consistent with the DP's conclusions. Therefore, the Petition does not contradict the site-specific results in the DP.[14]

For these reasons, Contention 2 does not raise a genuine dispute with Shieldalloy on a material issue of law or fact, thus the contention is inadmissible. 10 C.F.R. § 2.309(f)(1)(vi).

C. Contention 3 (Protective Cover)

Petitioner's Contention 3 asserts:

> Shieldalloy's cap design is fatally flawed because it will allow rainwater to infiltrate the radioactive waste.

Petition at 15. The contention challenges the NRC regulations and fails to satisfy the requirements of 10 C.F.R. § 2.309 (f)(1)(vi). It is therefore inadmissible.

1. Contention 3 raises a challenge to the NRC regulations

Contention 3 charges that the "proposed cover system consisting of soil and crushed stone" that will be placed over the slag "is not protective of the public health because it will allow rainwater infiltration." Petition at 15-16. As a result of the cover allowing rainwater

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[13] Petitioner's affiant Ms. Jennifer Goodman asserts that "according to the US Geological Survey," the concentration of uranium in the Kirkwood-Cuhansy [sic] aquifer is "typically 0.03 micograms per liter." Memorandum from Jenny Goodman to Donna Gaffigan, dated "January , 2007," attached to Declaration of Jennifer Goodman ("Goodman Memorandum") at 3. While that may be true for the aquifer as a whole, the report shows background uranium levels in groundwater surrounding the Newfield Plant site range from less than 0.01 ug/L. to 0.35 ug/L. USGS Report at 42 (Figure 13).

[14] The references in the Petition to the Dan Raviv Associates report and its criticisms of the report are immaterial because the DP uses that report's results only for its characterization of the underlying aquifer. *See* DP § 3.7.3 at 22 and ER § 3.4.2.3 at 3-30 to 3-31. The groundwater pathway has been deemed inapplicable to the Newfield site (*see* DP § 5.3), thus it was not included in the dose modeling. However, the analysis of potential impacts to groundwater was evaluated in DP Supplement, Appendix D, based on modeled transport of radionuclides from the slag to the groundwater. The groundwater data from the Dan Raviv Associates report were not used as input to this assessment.

infiltration, "groundwater contamination will also be likely where the waste will remain a radioactive hazard for billions of years." *Id.* at 20. This contention, like the two preceding ones, argues that the release of radioactive contaminants to the groundwater is absolutely prohibited. The discussion in response to Contention 1 above shows that such is not the case. A claim that no releases to the groundwater should be allowed is an impermissible challenge to the provisions in 10 C.F.R. § 20.1403.

2. Contention 3 does not controvert the DP

Contention 3 is based on the erroneous premise that the cover to be placed over the slag is intended to preclude rainwater infiltration. Petition at 21. The current design of the cover, however, is not intended to "prevent" rainwater infiltration into the consolidated material. Rather, its main design purpose is to prevent access to the underlying materials in order to avoid radiation exposure and deter scavenging, and also to control erosion. DP Supplement, Appendix F at 19.[15] The groundwater impact analyses conducted in support of the DP demonstrate that potential impacts to groundwater are not a concern (*see* DP Supplement, Attachment 1 at 5-6). Thus, there was no need to incorporate engineering features into the barrier to prevent rainwater infiltration or to conduct an analysis of the hydraulic performance of the engineered barrier.[16]

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[15] The engineered barrier proposed in Rev. 1a of the DP does not contain a geomembrane liner. DP Supplement, Attachment 1 at 7. While the original cover design outlined in Rev.1 of the DP incorporated a geomembrane liner, the redesigned cover shown in Rev. 1a relies on the combined soil and rock-covered surface to improve long-term durability. DP Supplement, Attachment 1 at 6-7. The Petition correctly states that the DP was revised to delete the geomembrane, but notes several places in the DP that continue to indicate the cover was designed to prevent rainwater infiltration into the consolidated material. Petition at 17, 20 (referencing DP at 38, 41, 64, 73, 74 n.184). These continuing references to a geomembrane in DP Rev. 1a are an oversight and should be disregarded.

[16] For perspective, the potential groundwater concentrations assessed in Appendix D of the Supplement to the DP can be compared to the maximum effluent values in 10 C.F.R. Part 20, Appendix B. NRC regulations allow these maximum effluent values to be used to show releases meet the public dose limits. 10 C.F.R. § 20.1302(b)(2)(i). These maximum effluent values are the concentrations "equivalent to the radionuclide concentrations which, if inhaled or ingested continuously over the course of a year, would produce a total effective dose equivalent of 0.050 rem (50 millirem or 0.5 millisieverts)." 10 C.F.R. Part 20, Appendix B. Radium concentrations estimated

Footnote continued on next page

Based on its misconception of the purposes of the cover to be placed over the slag, Contention 3 challenges the ability of the cover to prevent rainwater infiltration. Those challenges are irrelevant and, as discussed below, erroneous. They are:

- The long-term erosion protection provided by the cover will not prevent rainwater infiltration. Petition at 17.
- The DP contains no analysis of the hydraulic performance of the cover. *Id.*
- No specifications have been provided for the index properties of the soil layer. *Id.*
- No evaluation of candidate borrow sources has been documented. *Id.*
- No specifications for placement of the soil layer are included. *Id.*
- No justification is provided for the use of a runoff coefficient as high as 0.8 or an evapotranspiration rate of 24 inches per year. *Id.* at 17-18.
- Surface runoff likely will be a negligible component of the water balance for the cover. *Id.* at 18.
- Slope stability is a potential concern given the design of the cover. *Id.*
- No consideration was given to the potential for at least a portion of the cover to be inundated based on a PMF (probable maximum flood) scenario. *Id.*
- Soil development and root intrusion were not considered in the design of the cover. *Id.* at 18-19.

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by Shieldalloy for a hypothetical well 100 feet from the engineered barrier are an order of magnitude less than the maximum effluent value for radium of 60 pCi/L. *Compare* DP Supplement, Appendix D, Fig. 5 *with* 10 C.F.R. Part 20, Appendix B, Table 2. Therefore, Shieldalloy has ample basis to exclude groundwater from the dose modeling performed in support of the DP.

- Vegetation rooted in contaminated materials may contain elevated levels of uranium, thorium, radon and radium. *Id.* at 19.
- The climate of southern New Jersey is not favorable to the long-term isolation of the waste. *Id.*
- The DP fails to include a parametric or component sensitivity analysis to identify how much degradation of the engineered barrier would result. *Id.*
- The DP does not provide natural analogs for the effectiveness of the cover. *Id.*

These fourteen areas of alleged deficiency will be addressed *seriatim*.

a. No prevention of rainwater infiltration

As noted above, the linchpin of Contention 3 is the assumption that the cover should be impermeable to rainwater infiltration. The Contention disputes that the design of the cover will prevent such infiltration. Petition at 17. However, since that is not the intent of the design of the cover, the contention fails to controvert the DP and is inadmissible for it fails to comply with 10 C.F.R. § 2.309(f)(1)(vi).

b. No analysis of the hydraulic performance of the cover

Contention 3 criticizes the DP because it "appears to be devoid of consideration regarding the hydraulic performance of the cover." Petition at 17. However, under the restricted use and alternate criteria provisions of 10 C.F.R. Part 20, Subpart E, engineered barriers are to be evaluated on a case-by-case basis using a risk informed approach and preventing infiltration of water is only one of several potential design criteria that could drive the design of an engineered barrier. NUREG-1757, Vol. 1, Appendix M § M.5.2 and Vol. 2, Section 3.5 at 3-6 and 3-7. Given that the groundwater impact analysis conducted in the Supplement to the DP demonstrates

that potential impacts to groundwater are not a concern, the main purposes of the proposed engineered barrier are to control erosion and prevent access to the underlying materials in order to avoid radiation exposure and deter scavenging. Therefore, evaluation of the hydraulic performance of the cover is unnecessary. NUREG-1757, Vol. 2, Appendix P.

c. No specifications for the index properties of the soil layer

A related claim in the contention is that "[n]o specifications have been provided for the index properties (i.e., grain size distribution, Atterberg limits, activity, etc.) and hydraulic conductivity of the soil layer. . . " Petition at 17. No such specification is necessary at this time because, as noted in several instances in the DP, the sources of the final cover materials (soil and stone) will be identified and further evaluated during the engineering final design process. DP § 8.3 at 95; DP Supplement, Appendix E at 1, and Appendix F, at 20-21.

d. No evaluation of candidate borrow sources

As stated, there are several instances within the DP where it notes that the sources of the final cover materials (soil and stone) will be identified and further evaluated during the engineering design process. DP § 8.3 at 95; DP Supplement, Appendix E at 1-2, and Appendix F, at 20-21.

e. No specifications for placement of the soil layer

The DP outlines the final design and specifications which will address final contours, design details, specifications, and QA/QC plans for the placement of soil and cover construction. DP § 8.3 at 95.

f. No justification is provided for the use of a runoff coefficient as high as 0.8 or an evapotranspiration rate of 24 inches per year

Contention 3 alleges that "no justification is provided for the use of a surface runoff coefficient as high as 0.8 . . .," Petition at 17-18, and that no justification is provided in the DP for "an evapotranspiration rate of 24 inches per year for a cover with a crushed rock surface and no vegetation." Petition at 18. However, the evaluation of potential impacts on groundwater was based on an assumed precipitation infiltration rate of 10.9 inches per year that is representative of the natural groundwater recharge rate. DP Supplement, Appendix D at 2. Therefore, this value is not impacted by the referenced runoff coefficient or evapotranspiration rate and agrees with that recommended by Petitioner. Spayd Report at 1.[17] To conservatively estimate potential erosion from the engineered barrier, a runoff coefficient of 0.8 for a rock-covered slope was used in the calculations presented in Appendix E to Rev. 1a of the DP, as recommended in NUREG-1623 (Section 2.4.1) for the evaluation and design of the required rock size for the engineered barrier. As the main purposes of the proposed engineered barrier are to control erosion and prevent access to the underlying materials in order to avoid radiation exposure and deter scavenging, the runoff coefficient and evapotranspiration parameters do not otherwise impact the evaluation of the effectiveness of the proposed engineered barrier.

g. Surface runoff component of the water balance

Contention 3 states: "Surface runoff likely will be a negligible component of the water balance for this cover." Petition at 18. Since the main purposes of the proposed engineered barrier are to control erosion and prevent access to the underlying materials, the barrier has been designed as an erosion control cover and not as an infiltration control cover, and a water balance

[17] Memorandum from Steven Spayd to Jenny Goodman dated Jan. 12, 2007. While a runoff coefficient of 0.8 and an evapotranspiration rate of 24 inches per year are cited at DP Supplement Section 5.4.3.2 at 72 and 71, respectively, these values were not used in the evaluation of potential impacts to groundwater in Appendix D.

is not of concern. NUREG-1757, Vol. 2, § 3.5 (discussion of resistive caps, water balance caps and erosion control caps) and Appendix P. As mentioned previously, the evaluation of potential impacts on groundwater is based on an assumed precipitation infiltration rate of 10.9 inches per year, which is representative of the natural groundwater recharge rate (DP Supplement, Appendix D at 2) and is consistent with that recommended by Petitioner (Spayd Report at 1).

h. Slope stability as a potential concern

The contention also asserts that "[s]lope stability is a potential concern in the short- and long-term due to the proposed 3:1 side slopes [and] the lack of information provided regarding the cover soil requirements . . . ." Petition at 18. The contention overlooks the fact that the sides of the pile, as it currently exists without an engineered barrier, have 2 horizontal to 1 vertical (2:1) (or steeper) side slopes that have withstood decades of weathering without major failure. Therefore, there is existing evidence that the pile materials themselves are stable at slopes even greater than that proposed. DP Plate A, Shieldalloy Metallurgical Corporation Facility Topography. The contention also overlooks the fact that the cover design was developed in accordance with the guidance that was available when the DP was prepared, specifically: "The staff's preferred approach is for licensees to design a robust engineered barrier with an erosion control cover that is consistent with the NRC's guidance entitled Design of Erosion Protection for Long-Term Stabilization in NUREG-1623 and section 3.4, Design of Erosion Protection, in NUREG-1620, Rev. 1." NRC Staff Interim Guidance for a Long-Term Control Possession Only License at the Shieldalloy Newfield Site, New Jersey, dated April 15, 2004 at 6 (ADAMS Accession no. ML041320436). Therefore, the design presented in the DP is based on the desire to enhance erosion protection. The proposed slope is consistent with New Jersey's regulatory requirements for maximum slopes for municipal solid waste landfills [NJAC 7:26-

2a.7(i)5.iii]. In addition, slope stability optimization will be a consideration when specific materials of construction are defined in more detail. DP § 8.3 at 95. Selection of construction materials is not warranted at this stage of the decommissioning planning process because the availability of specific materials could change by the time the barrier is actually constructed.

i. Potential for inundation of the cover in a PMF scenario

The Petition charges that the DP fails to consider the potential flooding of the cover in a probable maximum flood ("PMF") scenario. Petition at 18. This allegation is incorrect. The impact of a PMF scenario is specifically discussed by Shieldalloy. DP Supplement, Appendix E. The PMF analysis in the DP assumes that flooding of the Hudson Branch will occur under PMF conditions, but concludes that the water velocity at the outer limits of flow (i.e., at the base of the slag pile) will be significantly less than the maximum permissible velocity for a vegetative-covered slope (1.5 ft/sec). The maximum permissible velocity of a stone-covered slope would be even higher than that for a vegetative-covered slope. Furthermore, the floodwaters would be flowing from east to west (the direction of flow in the Hudson Branch) and the only portion of the slope to be inundated under the PMF would be the southerly end of the westerly (downstream) face where the force of the flow would be less than if the inundation were on the upstream face. The DP calculations indicate that a PMF would not endanger the integrity of the slope.

j. Lack of consideration of soil development and root intrusion

As the main purpose of the proposed engineered barrier is to control erosion and prevent access to the underlying materials in order to avoid radiation exposure and deter scavenging, the barrier has been designed as an erosion control cover and not an infiltration control cover. Therefore, the impact of soil development and root intrusion on the hydraulic conductivity of the

barrier are not of concern. NUREG-1757 Vol. 2 § 3.5.4.2 (referencing evolution of soil properties and unanticipated ecological consequences, including development of deeper rooted species, as a degradation mechanism for a water balance cap). Hhowever, such degradation mechanisms are not addressed within Appendix P, Example of a Graded Approach for Erosion Protection Covers, Section P.4, Degradation Mechanisms for Erosion Control Covers). Furthermore, in NUREG-1623, Appendix D at D-3 (Section 2.1), the NRC clearly states that the use of a rock/soil matrix for erosion protection on the top and side slopes is acceptable.

k. Presence of radionuclides in vegetation rooted in contaminated materials

Contention 3 raises the concern that vegetation rooted in contaminated materials may contain elevated levels of uranium, thorium, radon and radium. Petition at 19. The reference that is provided (Exhibit B to the Petition) for this very general and vague statement focuses on the impacts of rooted plants on the permeability of Uranium Mill Tailings Radiation Control Act soil covers (typically constructed at shallow slopes), and the tendency for the roots to cause cracking of clay layers, clogging of lateral drainage layers, increases in the permeability of the cover and -- should the roots penetrate the cover -- the bioavailability of the underlying uranium mill tailing contaminants. There is no basis for the interpolation of this very general statement regarding a different barrier design and different underlying materials to the specific conditions associated with the proposed engineering barrier at the Newfield Plant, and the Petition offers none. In addition, the DP considers the potential development of vegetation on the surface of the engineered barrier by evaluating the impact of vegetation through the ingestion by a recreational hunter of game feeding on vegetation from the site. DP Supplement, Table 17.4.7.

l. Suitability of the climate of southern New Jersey for the long-term isolation of the waste

Contention 3 alleges that the climate of southern New Jersey is not favorable to the long-term isolation of waste, and that long-term hydrological isolation of buried waste at arid and semi-arid sites is more preferable. Petition at 19. Such an assertion is irrelevant for several reasons. Climate data specific to southern New Jersey were used in performing the engineering design calculations presented in the DP, which is the subject under consideration in this proceeding. DP Supplement, Appendix E. The Petition does not contend that inappropriate climatological data were used. Also, while arid climates may enhance long-term hydrologic isolation of buried waste, hydrologic isolation of the materials at the Newfield Plant site is not required by NRC regulations and was not a goal of the engineered barrier design.

m. Failure to include a parametric or component sensitivity analysis

The analysis that Petitioner alleges is lacking is a sensitivity analysis of the degradation of the engineered barrier, recommended in NUREG-1757, Section 3.5.3. Petition at 19. The recommendation that a parametric or component sensitivity analysis be conducted with respect to engineered barrier performance was incorporated in NUREG-1757 in September 2006, after the DP was submitted.[18] However, the engineered barrier was designed, in accordance with the guidance in NUREG-1623, "Design of Erosion Protection for Long-Term Stabilization" (2002), to provide long-term protection against erosive forces. DP Supplement, Appendix E, Appendix F § 8.3.3 and Appendix G, Fig. 18.8. Nonetheless, a sensitivity analysis of the engineered barrier layer was performed during the dose modeling (*see* DP § 5.2.2.2.1), with the thickness of the barrier modeled as a triangular distribution with a central tendency value of one (1) meter and

[18] The NRC interim guidance (April 15, 2004, ADAMS No. ML041320436) and previous versions of NUREG-1757 did not recommend the performance of a parametric or component sensitivity analysis of the engineered barrier.

a range of 0.9 to 1.2 meters. The resulting dose is insensitive to barrier thickness over the stated range. In addition, the potential for cover degradation is accounted for in the soil loss analysis (see DP, Appendix 19.3), which demonstrates that, even if the cover was comprised of only a soil layer (i.e., without a surficial stone layer), it would be sufficiently robust to shield the underlying material for more than 1,000 years.

n. Failure to provide natural analogs for the effectiveness of the cover

The consideration of natural analogs with respect to long-term performance of some engineered barriers was incorporated in NUREG-1757 in September 2006, after the DP was submitted (reference NUREG-1757, Vol. 2, Rev. 1, Section 3.5.3 at 3-14).[19] Since the DP and DP Supplement were prepared under older guidance documents, natural analogs were likewise not considered in the DP. However, in raising the issue of natural analogs, Petitioner (Goodman Memorandum at 2) notes that "NUREG 1757 uses Native American Mounds to demonstrate erosional stability, but states that the ability of the mounds to limit infiltration is unknown." Therefore, the Petitioner acknowledges the existence of natural analogs for erosional stability. As the proposed engineered barrier has been designed as an erosion control cover and not an infiltration control cover, the ability of the engineered barrier to limit infiltration is not pertinent.

In summary, and as noted in the earlier discussion of applicable legal standards, an intervenor "has an ironclad obligation to examine the publicly available documentary material pertaining to the facility in question with sufficient care to enable the petitioner to uncover any information that could serve as the foundation for a specific contention." 54 Fed. Reg. at 33,170. That obligation includes the need to review the licensing application to determine whether the

[19] The interim guidance (April 15, 2004, ADAMS No. ML041320436) and previous versions of NUREG-1757 did not discuss the consideration of natural analogs.

issues the intervenor wishes to raise in fact do raise a genuine dispute with the applicant on a material issue of law or fact. In Contention 3, the discussion above demonstrates that Petitioner has failed to discharge its obligation; therefore, the contention fails to meet the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and is inadmissible.

D. Contention 4 (Site Characterization for Radionuclide Contamination)

Contention 4 reads:

> Because Shieldalloy has failed to fully characterize its facility for radionuclide contamination, it has failed to present sufficient information to assess whether portions of the site meet the dose criteria under the license termination rule.

Petition at 22. Contention 4 is inadmissible because it raises issues that are not material to the findings that the NRC must make (10 C.F.R. § 309(f)(1)(iv)). It also fails to raise a genuine dispute with Shieldalloy on a material issue of law or fact, thus the contention is also inadmissible on that basis. 10 C.F.R. § 2.309(f)(1)(vi).

1. Contention 4 misinterprets the purpose of the radiological survey presented in the DP and the findings the NRC must make with respect to the survey in order to approve the DP

Contention 4 challenges the adequacy of the information and analyses presented in Chapter 4 of the DP, "Radiological Status of the Facility." The specific statement of the issue raised by the contention is: "The DP contends that the facility is fully characterized for radionuclide contamination. DP Rev. 1 Chapter 4. However, the characterization that was submitted . . . is not adequate. Goodman Memorandum pages 3 to 5. Shieldalloy should be required to fully characterize the facility before it submits a DP so NRC can ensure that the site is classified correctly for the final status survey so that it can be determined if the site is fully remediated and complies with the LTR." Petition at 22-23. Petitioner's statement of the basis of Contention 4 elaborates the description of the issue as follows:

> NUREG-1757 requires the final status survey to be submitted with the DP to allow the NRC to determine whether the survey is adequate for demonstrating compliance with the radiological criteria for license termination. Vol. 1 page 15-9. Shieldalloy has failed to conduct a full characterization survey of its facility. Exh. M.

Petition at 23. The contention, therefore, is based on the argument that the DP must contain a "final status survey" containing a "full characterization" of the Newfield site *before* the DP can be approved. The argument misinterprets the reviews and findings that the NRC must make in order to approve the DP and is therefore inadmissible. 10 C.F.R. § 2.309(f)(1)(iv).

Section 15.4 of NUREG-1757, "Decommissioning Surveys" makes it clear at the outset that "[f]ollowing the decision to cease operations, a number of surveys may be needed to determine the site radiological status, monitor progress during remediation, and confirm that the site meets the radiological release criteria." NUREG-1757, Vol. 1, Rev. 2 at 15-8. Those include, *inter alia,* a "site characterization survey" (described in Section 15.4.1 of Vol. 1, Rev. 2) and a "final status survey" (described in Section 15.4.3). The difference between the two has apparently not been apprehended by Petitioner.

> A site characterization survey is intended
>
> > to determine the type and extent of radiological contamination of structures and environmental media. This information is typically provided as part of the DP. The staff reviews the information in the DP to determine whether or not there is sufficient information to permit planning for site remediation that will be effective and will not endanger the remediation workers, to demonstrate that it is unlikely that significant quantities of residual radioactivity have gone undetected, and to provide information that will be used to design the final status survey. . . . Generally, the type and scope of the characterization survey information are less detailed than those required for a final radiological survey.

NUREG-1757, Vol. 1, Rev. 2 at 15-8. By contrast, a final status survey is submitted once decommissioning is accomplished. "As the final step in decommissioning, the licensee shall ...

[c]onduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey." 10 C.F.R. § 40.42(j)(2). NRC guidance describes a process for preparing this final site survey report:

> Licensees wishing to terminate their licenses must demonstrate to NRC that residual radioactive material at their facility attributable to past licensed operations does not exceed NRC criteria for release of the facility. To the extent that unlicensed sources above background levels of radiation are commingled with licensed material, they are also remediated in decommissioning, and would be included in the source term for dose calculations. The final radiation survey demonstrates that the facility meets NRC criteria for release and termination of the license.
>
> NRC staff will review the final status survey design, as part of the DP review, to determine whether the survey design is adequate for demonstrating compliance with the radiological criteria for license termination.

NUREG-1757, Vol. 1, Rev. 2 at 15-9. The characterization information presented by Shieldalloy in Chapter 4 of the DP was drawn from surveys performed in performed in 1992, 1999, 2000 and 2001 (*see* DP, footnotes 41, 42, 43, 44 and 63). Those were not the "final status survey" referred to in the regulations. The required NRC actions with respect to a site characterization survey as the one described by Shieldalloy in Chapters 4 and 14 of the DP are to "determine whether or not there is sufficient information to permit planning for site remediation that will be effective and will not endanger the remediation workers, to demonstrate that it is unlikely that significant quantities of residual radioactivity have gone undetected, and to provide information that will be used to design the final status survey." NUREG-1757, Vol. 1, Rev. 2 at 15-8. The required NRC action is not, as alleged in Contention 4, "to assess whether portions of the site meet the dose criteria under the license termination rule," (Petition at 22), or to "determine whether the survey is adequate for demonstrating compliance with the radiological criteria for license termination," (*id.* at 23). The issue raised in Contention 4 as to whether the DP contains a "final status survey" containing a "full characterization" of the Newfield Plant site is thus not material

to the findings that the NRC must make to approve the DP. The contention therefore fails to satisfy the materiality requirement of 10 C.F.R. § 2.309(f)(1)(iv) and must be dismissed.[20]

2. Contention 4 raises no genuine dispute with the licensee on a material issue of law or fact

Contention 4 raises a series of alleged deficiencies in the DP's characterization of the levels of radioactivity at the Newfield site. The allegations include:

- The soil samples were sporadic and the EPA protocol for further analysis of water samples was not followed properly. Petition at 24.
- The laboratory data was either not present, or "had problems." *Id.*
- Other areas of the site should be sampled to ensure that radionuclides did not migrate from the areas that were licensed. *Id.*
- Shieldalloy's statement that the only areas within the SMC property lines where residual radioactivity exists in surface soils, other than the Storage Yard, are the concrete pads that housed the former AAF and Flex-Klean Baghouses, D-111 and D-102/112 is premature considering that there has been no final status survey of the property. *Id.*
- In addition to Class 1 survey units, Class 2 and Class 3 survey units are imperative. *Id.* at 24-25.

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[20] Shieldalloy will perform a site-wide final status survey, in accordance with the guidance in Section 15.4.3 of NUREG-1757 and as described in Chapter 14 of the DP, once all remedial actions are completed. The objective of the final status survey will be "to collect sufficient information to demonstrate, to a reasonable degree of statistical certainty, that the radiological parameters at the site do not exceed the established DCGLs [derived concentration guideline levels], and that the license termination criterion for restricted release has been met." DP Section 14.3.1 at 137.

- The areas where scale drawing and map of soil and water sampling results on Appendix B to the ER shows that contamination above background levels need to be addressed in the final status survey of the site prior to the license amendment. *Id.* at 25.

- There does not appear to be an accurate accounting of the areas where slag may have been used as fill. Accordingly, the entire site should be included in a final status survey. *Id.*

- Multiplying out the assumptions of the quantity of radioactive material that may be present as fill slag yields a concentration that is three orders of magnitude above New Jersey's cleanup standards, which would not be considered a nominal radionuclide content. *Id.*

- Other DP deficiencies associated with the failure to properly characterize the site are described in Sections 4.2.1 to 4.2.3, 4.4.1 and 4.5 to 4.7 of Goodman's Report.

None of these allegations raise a genuine issue of law or fact with the DP.

a. <u>The soil samples were sporadic and the EPA protocol for further analysis of water samples was not followed properly</u>

This allegation is made in Goodman Memorandum at page 1. Ms. Goodman offers no explanation as to why the soil samples were "sporadic" or in what respect "the EPA protocol for further analysis of water samples was not followed properly." It is well settled that "neither mere speculation nor bare or conclusory assertions, even by an expert, alleging that a matter should be considered will suffice to allow the admission of a proffered contention." *System Energy Resources, Inc.* (Early Site Permit for Grand Gulf ESP Site), LBP-04-19, 60 NRC 277, 289 (2004), *citing Fansteel, Inc.* (Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203

(2003). Therefore, these conclusory assertions by Petitioner's affiant carry no weight. *USEC*, CLI-06-10, 63 NRC at 472.

At any rate, the soil samples were not "sporadic" but were collected at specified intervals in accordance with the work plans for the various efforts (*see* Chapter 4 of the DP, footnotes 41, 42, 43, 44, 51 and 52). With respect to the alleged failure to properly follow the EPA protocols for further analysis of water samples, no specific response is possible since Petitioner does not identify the samples at issue. However, appropriate protocols were followed in all cases. For example, the analysis of groundwater samples during the 2005 sampling campaign (*see* Section 4.7 of the DP) was performed pursuant to EPA 900/9310 for gross alpha/beta activity. (Radionuclide-specific analyses were performed pursuant to standard test methods for radioisotopes in water.) Furthermore, the analyses were performed by a NELAC-accredited laboratory (http://www.epa.gov/nelac/) through the State of New Jersey (http://www.outreachlab.com/2k5/QUALS_CERTS.html). Other sampling data contain similar references to the analytical protocol and the laboratory's qualifications.

b. The laboratory data were either not present, or "had problems"

Again, these allegations are set forth in the Goodman Memorandum at page 1. Ms. Goodman offers no explanation as to what laboratory data were "not present," hence this claim in that respect should be disregarded. With respect to the "problems" with the laboratory data, she gives as an example of the alleged problems "not meeting the required minimum detectable activities (MDA)." She also states that "there is no indication if soil samples were sealed for 21 days prior to analysis to reach secular equilibrium." *Id.* However, she mentions no specific instance in which laboratory data did not meet the required MDA and the records of laboratory tests do not reflect such a situation. For example, the detection levels for the groundwater

samples analyzed as part of the April, 2005 sampling campaign were all well-below the MCL's for drinking water (*see* Section 4.7 of the DP).

It is also not clear which soil samples are alleged not to have been sealed for 21 days. If the concentrations of radionuclide progeny were to be used for assessing the concentration of parents in soil samples, the minimum holding time necessary to bring parents/progeny into equilibrium would have been met or a correction for disequilibrium conditions would have been applied in the interpretation of analytical results (*see* EPA standards 901.1 or DOE EML HASL 300 4.5.4). However, most of the samples collected at the site over the years were analyzed for thorium and uranium isotopes by radiochemical extraction and alpha spectroscopy. That method of analysis does not rely on equilibrium concentrations between parents and progeny since the concentration of the parents are analyzed directly. *See* industry standards such as DOE LANL ER200 or ASTM D3972. Therefore, this concern 4 is groundless.

c. Other areas of the site should be sampled to ensure that radionuclides did not migrate from the areas that were licensed

Ms. Goodman states that "[g]iven the fact that SMC confirms that the Hudson branch is in need of remediation, other areas of the site should be sampled to ensure the radionuclides did not migrate from the areas that were licensed." Goodman Memorandum at 3. However, characterization surveys were performed in 1991 and thereafter and are described in Chapters 4 and 14 of the DP. *See, e.g.*, DP § 4.5 at 29 and n.62 and § 14.1. Radiological characteristics in other locations at and outside the SMC fence line were also assessed. *See* DP § 14.1.1.

The concern expressed by Ms. Goodman that radionuclides may have migrated from the areas that were licensed (Goodman Memorandum at 3) is unfounded, since after the 1991 site-wide characterization survey was performed, routine surveillance activities in and around all

restricted areas have been performed once per calendar quarter. These surveillances have confirmed that no significant quantities of residual radioactivity have migrated past the restricted areas. DP, Section 14.1.6.

In short, the sampling and measurements that Petitioner and its affiant indicate should have been done have in fact been done, sufficient to classify the various areas at the site. The site-wide final status survey, to be performed as the final step of decommissioning (10 C.F.R. § 40.42(j)(2); DP § 14.3) will provide final documentation that the radiological conditions at the site meet the NRC requirements of 10 C.F.R. §§ 20.1402 and 20.1403.

d. Shieldalloy's statement that the only areas within the SMC property lines where residual radioactivity exists in surface soils, other than the Storage Yard, are the concrete pads that housed the former AAF and Flex-Klean Baghouses, D-111 and D-102/112 is premature considering that there has been no final status survey of the property

Petitioner disagrees with, calling it premature, the statement in Section 4.4.2 of the DP (at p. 28) that "the only areas within the SMC plant property lines where residual radioactivity exists in surface soils, other than the Storage Yard, are the concrete pads that housed the former AAF and Flex-Kleen Baghouses, D-111 and D-102/112." Goodman Memorandum at 4. However, as previously noted, the characterization and release surveys conducted by the Licensee, and subsequent periodic surveillance activities in and around all restricted areas, have confirmed that no significant quantities of residual radioactivity have migrated past these areas. DP, Section 14.1.6. Thus, it is not premature to assert that no residual radioactivity exists outside of them.[21] Furthermore, the radiological status of the entire site will be assessed and documented during the performance of the final status surveys as the final step of decommissioning. *See* DP § 14.

[21] Of course, this determination will be confirmed when the Final Site Survey is performed after decommissioning activities have been completed.

e. In addition to Class 1 survey units, Class 2 and Class 3 survey units are imperative

Ms. Goodman opines that "in addition to Class 1 survey units, Class 2 and Class 3 survey units are imperative considering the site has never been fully characterized and considering it is unknown where slag was used on site."[22] Goodman Memorandum at 4. However, Section 14.3.4 of the DP describes those locations at the SMC site that have been classified as Class 1, 2 and 3 areas, and Figure 18.11 of the DP is a map showing the classification of the site. Within the property boundaries, there are five (5) Class 1 areas, five (5) Class 2 areas and the remainder designated as Class 3.

f. The areas where scale drawing and map of soil and water sampling results in Appendix B to the ER shows contamination above background levels need to be addressed in the final status survey of the site prior to the license amendment

Petitioner cites a scale drawing and map of soil and water sampling results in Appendix B to the ER as showing contamination above background levels in the Hudson's Branch and outside the fenceline, to the north of the storage yard, and in areas where licensed material was never stored or used. These areas, claims Petitioner, need to be addressed in the final status survey of the site prior to the license amendment. Goodman Memorandum at 4.

The DP contains a description of the design of final status survey, to be performed as the final step of decommissioning. DP § 14.3. The DP classifies all areas of the Newfield Plant site as Class 1, 2 or 3 areas, as shown in DP Fig. 18.11. DP §14.3.4 at 139. Areas off the site will

[22] Class 1 areas are those that have (or had prior to remediation) a potential for radioactive contamination or known contamination above the DCGL. Class 2 areas are those that have a potential for radioactive contamination or known contamination, but are not expected to exceed the DCGL. Class 3 areas are those that are not expected to contain any residual radioactivity or are expected to contain levels of residual radioactivity at a small fraction of the DCGL based on site operating history and previous radiation surveys. DP § 14.3.4.

also be classified as part of the design of the final status survey in accordance with appropriate guidance. DP § 14.3.1 at 137. The Petition identifies no reason to suppose that potentially contaminated areas will not be included in the final status survey performed as the last step of decommissioning.

g. There does not appear to be an accurate accounting of the areas where slag may have been used as fill. Accordingly, the entire site should be included in a final status survey

Petitioner asserts that "[t]here does not appear to be an accurate accounting of the areas where slag may have been used as fill. There is not an accurate assessment of whether or not the slag was radioactive. Considering this uncertain history, the entire site should be included in a final status survey." Goodman Memorandum at 4. Of course, as indicated earlier, the entire Newfield Plant site *will* be included in the final site survey. *See* DP, Chapter 14.

Section 4.5 of the DP describes those locations on the property where slag *may* have been used as fill. However, there is no evidence that licensed radioactivity was ever placed in those locations, as the areas where slag may have been used as fill exhibit ambient exposure rates that range from background to only a few tens of microR (micro rads) per hour, which is inconsistent with the radiological character of licensed slag. DP § 4.5 at 29.

Each of the locations where slag may have been used as fill will be addressed in the site-wide final status survey, performed after decommissioning is complete. DP § 4.5 at 30 n.65 and § 14.3. There is no need or basis for performing such a survey in advance of implementing the DP.

h. Multiplying out the assumptions of the quantity of radioactive material that may be present as fill slag yields a concentration that is three orders of magnitude above New Jersey's cleanup standards, which would not be considered a nominal radionuclide content

Ms. Goodman claims that "[m]ultiplying out the *assumptions* of the quantity of radioactive material that *may* be present as fill slag yields a concentration that is three orders of magnitude above New Jersey's cleanup standards. This would not be considered a nominal radionuclide content." Goodman Memorandum at 4, emphasis added. Ms. Goodman's assumptions as to the quantity of radioactive material that "may" be present in the slag are not provided, nor is the basis for those assumptions stated. Therefore, her claim must be rejected as wholly speculative.[23] *Grand Gulf ESP Site,* LBP-04-19, 60 NRC at 289.

As shown in Section 4.5 of the DP, a nominal estimate of radioactivity in these areas of interest was derived by assuming that the areas do contain licensable slag, a highly conservative assumption made for the purposes of decommissioning planning. Nonetheless, any residual radioactivity at the site will be fully documented and compared to the site-specific release criteria as part of the final status survey (*see* Chapter 14 of the DP) before the decommissioning of the site is deemed to be complete.

i. Other DP deficiencies associated with the failure to properly characterize the site described in Sections 4.2.1 to 4.2.3, 4.4.1 and 4.5 to 4.7 of Goodman's Memorandum

Petitioners end their lengthy recitation of alleged deficiencies in the characterization of the Newfield site for radionuclide contamination with a statement to the effect that "[s]ections 4.2.1 to 4.2.3, 4.4.1, and 4.5 to 4.7 of Goodman's Report provide other DP deficiencies

[23] Ms. Goodman's conclusion that her speculative computation yields a radioactive concentration "that is three orders of magnitude above New Jersey's cleanup standards" is clearly irrelevant to this proceeding.

associated with the failure to properly characterize the site." Petition at 25-26. Such a vague assertion clearly does not even begin to meet the specificity requirements of 10 C.F.R. § 2.309(f)(10(i) and must be disregarded.[24]

In summary, Contention 4 must fail because it does not raise issues that are material to the findings that the NRC must make with respect to the DP and because it raises no genuine dispute with the DP on any material issues.

E. Contention 5 (Dose Modeling)

Contention 5 alleges:

> The DP obtains inaccurate dose modeling results by ignoring the likely scenario of groundwater contamination and ignoring other reasonable assumptions.

Petition at 27. In essence, this contention alleges that several exposure pathways were ignored in the dose modeling evaluations described in Chapter 5 of the DP and, if those exposure pathways were taken into consideration, the radiation doses to the public would exceed the limits set in 10 C.F.R. § 20.1403(e). The Petition states that the DP does not address three likely exposure scenarios: (1) groundwater contamination (Petition at 29-30); (2) farming up to the property boundary and on the unrestricted portion of the property (*id.* at 30); and (3) a family living on the unrestricted portion of the property (*id.* at 30-31).

The contention fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and is therefore inadmissible.

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[24] Without attempting to assume Petitioner's responsibility for parsing out potential claims contained in the cited sections of the Goodman Memorandum, Licensee notes that the statements contained in the cited sections are either insignificant (*e.g.*, "[a] detailed map of exposure rate readings and locations should be included," Goodman Memorandum at 4) or are repetitious of claims set forth elsewhere in the Petition.

1. Groundwater contamination scenario

The basis for Petitioner arguing that contamination of the groundwater is a likely exposure pathway is set forth in Section 5.2.2.2.4 of the Goodman Memorandum as follows:

> SMC does not provide sufficient justification for excluding the drinking water pathway. The aquifer beneath the SMC site is a Class IIA aquifer which means it can be used as potable water with treatment. Treatment is considered a control that will fail. Therefore, SMC must include the drinking water pathway in its all controls fail analysis. The potability of the groundwater is clearly under the State's jurisdiction and cannot be preempted by the federal government.

Goodman Memorandum at 6.[25] Ms. Goodman, however, does not address the discussion in the DP as to why groundwater need not be considered in the dose modeling:

> As part of the dose modeling assessment portion of the Decommissioning Plan, an analysis of radiation doses incurred by hypothetical receptors for a period extending 1,000 years into the future must be assessed. Based on the existing provision of drinking water by a publicly-owned water system, the lack of potable water wells within the restricted area of the SMC facility and the long-term effectiveness of [the engineered barrier when combined with][26] institutional controls and long-term maintenance and monitoring, ingestion of drinking water was not included as a potential exposure pathway within the Decommissioning Plan's dose modeling assessment. Furthermore, based on existing ground water data collected downgradient of the current Storage Yard (where residual radioactive materials have been stored with no protection against infiltration for over 30 years) licensed radioactivity has not been detected above the USEPA's drinking water standards.

DP, Rev. 1a, Appendix D at 1. The Goodman Memorandum thus ignores the fact that the groundwater is not potable because it is heavily contaminated with toxic chemicals (*see* DP, Rev. 1a, Appendix C at 12).[27] It argues, inconsistently, that treatment of groundwater for non-

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[25] The Goodman Memorandum nowhere describes the groundwater exposure pathway as being a "likely" one.

[26] The bracketed clause was written before the geomembrane was deleted from the design of the engineered barrier.

[27] In addition, the City of Vineland has imposed a well restriction area downgradient of the Newfield site and NJDEP has required that a groundwater classification exemption area be established for the site. DP, Rev. 1a, Appendix C at 12. These restrictions are further evidence that the groundwater in the vicinity of the site is not potable.

radiological constituents is an institutional control that will fail, yet groundwater will be ingested despite its becoming untreated and thus not potable.

Another reason that groundwater need not be considered a credible dose pathway is that Shieldalloy performed site-specific groundwater modeling that showed that the groundwater pathway, even if enabled, would have no significant radiological impact on hypothetical receptors. Shieldalloy letter to the NRC dated June 30, 2006 submitting Revision 1a to the DP, Attachment 1 at 5. The Goodman Memorandum does not address this determination.

In disregard for the information provided in the DP, Ms. Goodman insists that "[i]t *must be assumed* that the resident consumes groundwater. Just because there are no wells inside the Storage Yard does not mean that one cannot be drilled at the edge of the contaminated zone sometime in the future." Goodman Memorandum at 9, emphasis added. By insisting that groundwater must be considered despite all factors discussed in the DP for its exclusion, Petitioner ignores the application and does not raise a litigable issue with Licensee. 10 C.F.R. § 2.309(f)(1)(vi).

NRC regulations require each licensee to limit "total effective dose equivalent (TEDE) to individual members of the public." 10 C.F.R. § 20.1301(a)(1). Specifically, for decommissioning, NRC regulations require considering the "TEDE to an average member of the critical group." 10 C.F.R. § 20.1402. These regulations do not require considering contamination of groundwater, except to the extent that radiation doses to people result. The Petition would require ingestion of contaminated groundwater as a "likely" scenario. In so doing, the Petition raises an impermissible challenge to the NRC regulations, which do not so require.

2. Farming scenario

The Petition posits a scenario involving farming up to the property boundary and on the unrestricted portion of the property. The basis for this claim is that the DP states that the property will be subdivided for unrestricted release. Petition at 30.

The DP does consider a resident farm family scenario, but excludes it from detailed analysis. The DP states "[f]arming encroachment up to the property boundary is not likely due [to] anticipated land use factors in areas that border the deed-noticed SMC property." DP Section 5.3 at 39. Once again, this is consistent with the guidance in NUREG-1757, Vol. 2, Section 17.7.6.

The Petition does not state why farming should be considered, only that "SMC does not explain what the anticipated land use factors would be that would prevent farming up to the property boundary." Goodman Memorandum at 6. However, the DP states that Shieldalloy intends to retain the SMC site, both restricted and unrestricted portions, for industrial use. DP Section 16.3 at 154-55.

Furthermore, the Petition's assertion that the property will be subdivided for unrestricted release that could support farming uses is inconsistent with uncontested assessments of current soil conditions at the Newfield site. The likelihood that the Newfield Plant site will be restricted from residential use independent of its radiological status is discussed in the ER, which notes that chemical contamination of the soil would preclude residential uses, including farming. *See e.g.*, ER Sections 2.5 at 2-4, 3.11.2.3 at 3-78 to 3-79, 4.1.1 at 4-2, and 4.10.1 at 4-38. This discussion is ignored in the Petition. Therefore, the Petition raises no material dispute with the DP regarding considering farming as a reasonable scenario. A valid contention is not raised by an

intervenor merely asserting that some activity "ought" to be considered. *Rancho Seco,* LBP-93-23, 38 NRC at 246.

3. Residential use scenario

The Petition asserts that the DP fails to consider a suburban resident scenario. The Petition states, "the modeling should assume a family living on the unrestricted portion of the property." Petition at 31. As discussed above and in the ER, use of the Newfield Plant site for residential use is unreasonable because of the contaminated condition of the soil at the site that poses "potential risks associated with on-site residential exposures to chemical COCs [chemicals of concern] in site soils and dusts." ER Section 3.11.2.3 at 3-78. The Petition does not raise a litigable issue with the Licensee.

4. Dose computation results using "changed parameters"

In addition to arguing that the exposure scenarios discussed above be considered in the dose modeling, the Petition asserts that the modeled dose exceeds the NRC regulatory limit if "reasonable parameters" are assumed. The Petition asserts, "If [the groundwater] pathway is included in the modeling, with more reasonable parameters used for this type of cap, a TEDE of 1,718 mrem/yr at 800 years would result." Petition at 28. This asserted TEDE is three orders of magnitude higher than the results presented in the DP. DP at Table 17.8.

The result cited in the Petition is derived from Section 5.5.11 of the Goodman Memorandum. There, Ms. Goodman provides a listing of parameters "changed from the SMC dose assessment" and reports "a peak dose of 1,718 mrem/y at 800 years for the LTC License Alternative." Goodman Memorandum at 11. However, the memorandum does not identify the bases for selecting the "changed parameters," the source of those parameters, or the methodology used in her computation that led to such a high peak dose. It is also silent as to which scenarios

were assumed (industrial worker, farming, suburban resident, other), what locations were used (restricted and unrestricted areas) and what situations were involved (all controls fail, only institutional controls fail, controls in place). As noted earlier, conclusory assertions, even by an expert, will not suffice to allow the admission of a proffered contention. *Grand Gulf ESP Site*, LBP-04-19, 60 NRC at 289. Where a purported expert performs an analysis but does not explain the methodology or its technical basis and reports results that are wildly inconsistent with other analyses (*see* Chapter 5 of the DP), it is appropriate to disregard the expert's analysis. *USEC*, CLI-06-10, 63 NRC at 472.

5. Other dose computation claims

Contention 5 raises a number of other objections to the dose modeling presented in the DP. Apart from their questionable validity (*see* below), the Petition is silent as to how these various methodological objections, even if valid, would affect the TEDE dose computation. Therefore, they do not support admissibility of the contention.

a. <u>The amount of time a resident is assumed to spend at the site is not conservative</u>

The Petition claims that "[t]he amount of time a suburban resident assumed by the DP to spend at the site is not conservative." Petition at 32. This claim is based on the discussion in the Goodman Memorandum that "[t]he amount of time spent at the site is not conservative . . . . The values listed, 240 days for 8 hours per day are not justified. That means that the resident is away from the home for 4 months out of the year." Goodman Memorandum at 8. The suburban resident scenario only applies when institutional controls fail. In this case, the resident is assumed to live in close proximity to the restricted area. *See* DP, Rev. 1a at 60 (Section 5.3.3.2). The 240 day exposure duration is consistent with the recommendations of NUREG/CR-6697, Appendix C. However, even if it is assumed that the suburban resident exposure duration is

continuous (8,760 hours per year), when the calculated exposure rate of 1E-05 mR per hour (see Table 17.8.2 of the DP Supplement) is applied, the resulting dose potential is still less than the 1 millirem estimate shown in Section 5.6 of the DP (table at 85).

b. Use of radioactive slag as construction material

Petitioner posits that "[t]he engineered cap and slag may be an ideal source for construction material." Petition at 32. The source for this postulation is Ms. Goodman's statement that "[i]f rock material were needed as fill or for some other construction project, the engineered cap, as well as the slag beneath it would be an ideal source." Goodman Memorandum at 7. This fanciful scenario assumes that there would be some construction project in the vicinity of the Newfield Plant site and that, institutional controls having failed, those engaged in such a project would help themselves to the cap (which is non-radioactive) and even to some of the slag beneath, whose individual dimensions are so large that significant down-sizing would be required prior to their use. (*See* Section 5.3 of the DP for other reasons why scavenging of slag is not a reasonable scenario.) If such an industrial user were assumed, how much slag would it take? How would it be used? Would the rock be placed above or below the slag in the construction? How far above the slag layer would there be human occupancy? For how long? The questions are many and do not lend themselves to reasonable estimation. The NRC regulations do not require consideration of such speculative scenarios. As stated earlier, a valid contention is not raised by an intervenor merely asserting some activity "ought" to be considered. *Rancho Seco,* LBP-93-23, 38 NRC at 246.

The Petition states that material may be ideal for use as fill because "Shieldalloy used the slag material as fill for a road and underneath a building knowing full well that this material was radioactive. DP rev. 1 pages 27, 29." Petition at 32. This statement mischaracterizes the

discussion in the DP, which actually states, "the slag used to form the road bed was not characteristic of licensed material." DP § 4.4.1 at 27. No basis is provided in the Petition for considering use of licensed material as fill.

c. Direct contact with slag pile

The Petition charges that the DP "fails to take into account exposure from direct contact with the uncovered pile. DP Rev. 1a § 5.5.10. However, as discussed above, contact with the uncovered pile when institutional controls fail is a reasonable scenario." Petition at 33. This allegation is, however, incorrect because it ignores the direct contact scenario discussed in the DP. The scenario where a trespasser comes in direct contact with the uncovered pile is considered in DP Rev. 1a § 5.5.9, on the same page and immediately above the one cited by Petitioner. There, the scenario is assumed in which a trespasser excavates the cover down to the slag, incurring 80 hours of exposure to the uncovered slag. This scenario yields an exposure rate estimate of 0.13 mR per hour, or a total estimated dose of 8.3 millirem for the 80 hour exposure period. DP, Rev. 1a at 72 and 86.[28] Another direct contact scenario considered in the DP is that of a recreational hunter who comes in contact with the exposed pile while hunting for game. *Id.*, § 5.3.3.3 at 65 and 86.

Petitioner also ignores the slow rate of erosion of the cap, even if institutional controls fail. The rock-protected engineered barrier was designed in accordance with NUREG-1623 specifically to prevent erosion and to provide long-term stability with minimal maintenance. As stated in NUREG-1757, Vol. 2, Rev. 1 Appendix P at P-6, "[t]he staff could approve an

[28] The scenario addressed in Section 5.5.10 (the section cited by Petitioner) is supposed to occur *after* the trespasser has abandoned the site, leaving the slag pile uncovered. That scenario does not consider direct contact with the uncovered slag pile because it is intended to compute the exposure of a residential family living 1,000 feet downrange from the open excavation. Such a hypothetical family is estimated to have a dose potential of 17 mrem/year.

engineered barrier design that is effective and maintains control of the material for a period exceeding 1000 years.... A design that meets the suggested flooding and erosion protection criteria of NUREG-1623 is acceptable." Therefore, if cap maintenance is no longer performed because of the failure of institutional controls, the rock-covered cap will not disappear as Ms. Goodman apparently assumes. The durability of the cap in the event institutional controls fail is further supported by Appendix 19.3 to the DP, which presents a calculation of the erosion loss to a soil-covered cap, yielding an average yearly erosion rate of 0.00046 feet, or a total 0.46 feet (5.5 inches) loss over 1,000 years. Appendix 19.3 at 2. The presence of a rock layer over the soil cover would further reduce the amount of erosion.

d. Lack of consideration of "progeny" of uranium and thorium

The Petition (at 33), and the Goodman Memorandum (at Section 5.5.9), challenge the exposure computation for the trespasser excavating the slag. They assert that the computer run that estimated the 8.3 millirem exposure for the trespasser neglected to take into account all of the progeny associated with uranium and thorium. The Petition is correct in that not all of the photon-emitting progeny of uranium and thorium were included in the calculation (*see* DP Table 17.7). However, the inclusion of the remaining photon-emitting progeny in the analysis, assuming all are in equilibrium with their parent, would result in only a marginal increase in the exposure rate.[29]

[29] The Goodman Memorandum asserts that accounting for the progeny of uranium and thorium in the computation would result in exposure rates "two orders of magnitude higher than shown in Appendix 19.5." Goodman Memorandum at 11. No explanation is offered, however, as to how this estimate was obtained, so it should be disregarded for lack of support. *USEC,* CLI-06-10, 63 NRC at 472.

e. Lateral and vertical extent of contamination

The Petition (at 33) and the Goodman Memorandum at (Section 5.2.1) assert that "the lateral and vertical extent of contamination has never been determined," citing the 1991 site characterization survey. However, as Ms. Goodman points out, the vertical extent of the contamination is only relevant to the computation of the releases (if any) to the groundwater. Goodman Memorandum at 5. As discussed earlier, groundwater contamination is not a reasonable exposure pathway, so the failure to estimate the vertical extent of the contamination is immaterial.

With respect to the horizontal extent of the contamination, Ms. Goodman theorizes that "without a determination of the lateral extent of the contamination, contamination above the established cleanup levels could be missed in the final status survey." *Id.* Ms. Goodman fails to explain how this could occur. Shieldalloy is committed, as discussing earlier, to performing a site-wide final status survey that conforms to the guidance in Section 15.4.3 of NUREG-1757, once all remedial actions are completed (*see* Chapter 15 of the DP). The final status survey will collect sufficient information to demonstrate to a reasonable degree of statistical certainty that the residual radioactivity concentrations at the site do not exceed the established DCGLs, and that the license termination criteria for restricted release have been met. DP Section 14.3.1 at 137. Any challenge to the adequacy of the final status survey at this point is premature and does not raise a litigable issue.

f. Use of weighted averages

The Petition states that the DP derives its source term by using the weighted averages of the concentration of materials in the Storage Yard, which is allegedly improper because the materials are not capable of being blended together. Petition at 34. Ms. Goodman argues that

"[i]f the slag were uncovered, as would be the case in an all controls fail scenario, *it is reasonable to assume* that the receptor would be exposed to the higher concentration . . . " Goodman Memorandum at 5, emphasis added.

However, such an assumption is hardly reasonable. The material captured under the engineered barrier includes boulders of vitreous, radionuclide-bearing slag, a baghouse dust pile with source material concentrations that are only barely distinguishable from background, contaminated soil and surface-contaminated building rubble. DP, Rev. 1a at 35-36. Prior to construction of the engineered barrier, these materials will be consolidated, with the baghouse dust, soil and finer slag materials used over the larger-sized slag material as subgrade preparation for the engineered barrier. DP Rev. 1a, Appendix F at 19. Therefore, a person attempting to excavate the barrier would come in contact with a mixture of those materials. A reasonable assumption, and the one used in the DP, is that the dose to such a person would be a composite of those from the various sources to which he or she would be exposed, not just from the higher concentration material. Therefore, this claim is speculative.

g. Failure of the fence

The Petition and Ms. Goodman emphasize that the fence surrounding the remediated slag pile "should be assumed to fail since the waste will remain a radioactive hazard into perpetuity." Petition at 34; Goodman Memorandum at 7. The significance of this assertion is unclear. The DP contains an assessment of the doses to a variety of hypothetical receptors who are assumed to be exposed to radioactive material from the restricted area, including an occasional trespasser (DP Rev. 1a, Section 5.3.2.3); a hunter (*id.,* Section 5.3.3.1 – a scenario in which the fence is explicitly assumed to fail, *see* Section 5.3.3.1 at 57); and the above-discussed excavator (Section

5.5.9). Since these individuals are assumed to come into contact with radioactive materials, it is irrelevant whether the fence has fallen, has been removed, or they have simply climbed over it.

h. Hydraulic gradient

The Petition asserts that the hydraulic gradient of the saturated zone is assumed in the DP to be 0.004 whereas in reality it should be half as much. Petition at 35. Be that as it may, this assumption is only relevant to computing infiltration into the groundwater. *Id.* Since groundwater exposure is not a credible exposure pathway for the reasons discussed earlier, this assertion, even if correct, is immaterial to the conclusions of the dose modeling shown in Chapter 5 of the DP. Furthermore, Petitioner (Petition at 35) acknowledges that Shieldalloy's analysis showing the groundwater pathway is not a credible exposure pathway *uses* the hydraulic gradient of 0.002 that Petitioner recommends. DP Supplement, Appendix D at 3.

i. Unspecified allegations

The Petition closes its litany of dose assessment claims by pointing out that "[s]ections 5.1, 5.2.2.2.1 to 5.2.2.2.3, 5.3.3.3.1 to 5.3.3.4, 5.5.1, 5.5.11 of Goodman's Report provide other DP deficiencies associated with the dose modeling. Page 3 of Spayd's Report also provide [*sic*] DP deficiencies." Petition at 35. As discussed earlier in connection with Contention 4, such a vague reference of "where to find more claims" does not comply with the specificity requirements of 10 C.F.R. § 2.309(f)(1)(i) and should be disregarded.

Thus, Contention 5 raises no genuine dispute with the DP on any material issues and should be rejected. 10 C.F.R. § 2.309(f)(1)(vi).

F. Contention 6 (Sufficiency of 1,000-Year Modeling)

Contention 6 reads:

> The 1000 year modeling conducted by Shieldalloy fails to adequately protect the public safety and health because the waste will remain a radioactive hazard for billions of years.

Petition at 42. Contention 6 is inadmissible because it is an impermissible attack on the Commission's rules. 10 C.F.R. § 2.335(a). In addition, the proposed contention fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(ii) and (vi) and is therefore inadmissible.

1. Contention 6 impermissibly challenges the NRC's rules

In Contention 6, Petitioner challenges the 1,000 year duration of the DP's modeling as violating the LLRWPA, the AEA, and the Licensing Termination Rule. Petition at 42. Contention 6 would require that Shieldalloy conduct TEDE calculations out to "billions" of years after decommissioning. *See, e.g.,* Petition at 44 (the 1,000 year modeling performed by Licensee is "inadequate" because "the radiological hazard from the waste will endure for billions of years"). This attack on the period covered by the DP's dose modeling is actually a direct and impermissible challenge to the requirements of 10 C.F.R. § 20.1401(d). Hence, Contention 6 is inadmissible. 10 C.F.R. § 2.335(a).

Paragraph (d) of 10 C.F.R. § 20.1401, "General provisions and scope," of the Commission's regulations on "Radiological Criteria for License Termination" provides:

> When calculating TEDE to the average member of the critical group *the licensee shall determine the peak annual TEDE dose expected within the first 1000 years after decommissioning.*

10 C.F.R. § 20.1401(d), emphasis added. This provision applies to "the decommissioning of facilities licensed under Part[]. . .40" of the NRC's regulations, such as Shieldalloy's Newfield Plant. 10 C.F.R. § 20.1401(a). Thus, when calculating TEDE to the average member of the critical group, a licensee's TEDE calculations need only extend 1,000 years out from the time after decommissioning has been completed. As Petitioner acknowledges in Contention 6,

Shieldalloy complied with the express wording of the NRC's rules and performed TEDE calculations out to 1,000 years. Therefore, in attacking the duration of the DP's modeling, Petitioner is challenging 10 C.F.R. § 20.1401(d).

In making such a challenge, Petitioner alleges that the intent of the § 20.1401(d) "is to actually require longer does assessments depending on the duration of the nuclide." Petition at 43. Petitioner interprets the regulation as applying the 1,000-year duration only to "short-lived nuclides." *Id.* Such an interpretation flies in the face of the text of the regulation, which makes no such distinction, and is refuted by the history of the Commission's evaluation of the usefulness of dose assessments beyond 1,000 years.

The Commission has explicitly disavowed the need for long-term modeling spanning thousands of years – let alone billions of years – into the future for the decommissioning of sites with residual radioactivity near background levels. When first proposing its Radiological Criteria for License Termination, the Commission directly responded to comments that called for TEDE calculations "carried out to provide estimates of potential contamination of groundwater for tens or even hundreds of thousands of years into the future." *Proposed Rule, Radiological Criteria for License Termination*, 59 Fed. Reg. 43,200 (Aug. 22, 1994). The Commission rejected these comments, reasoning that

> [w]hen predicting thousands of years into the future, uncertainties become very large because of major potential changes in the hydrogeologic regime at the site over these long periods of time. When the potential consequences of exposure to the radioactive source are great; e.g. as in the case of a high-level waste repository, distant future calculations may provide some insight concerning the relative magnitude of consequences. However, the consequences of exposure to residual radioactivity at levels near background are small, and considering the large uncertainties, long term modeling of near background doses may be virtually meaningless. In light of this, *the Commission does not believe it would serve any useful purpose to attempt to estimate radiation does from residual radioactivity thousands of years into the future.*

59 Fed. Reg. at 43,224 (emphasis added). *See also, id.* at 43,212.

In promulgating a final rule, the Commission again addressed comments arguing that the time period for calculating TEDE was too short. According to the Commission, "[s]ome commenters objected to the proposed 1000-year time frame for calculating dose and wanted it lengthened to better predict health effects over the hazardous life of *each isotope*." *Final Rule, Radiological Criteria for License Termination*, 62 Fed. Reg. 39,058, 39,083 (July 21, 1997) ("Final Rule") (emphasis added). The Commission rejected this argument, which is exactly the one that Petitioner makes in Contention 6, and reiterated the rationale that it had stated in the proposed rule for limiting the time period to 1,000 years:

> As previously discussed in the preamble to the proposed rule, the Commission believes the use of 1000 years in its calculation of its maximum dose is reasonable based on the nature of the levels of radioactivity at decommissioned sites and the potential for changes in the physical characteristics at the site over long periods of time. . . .where the consequences of exposure to residual radioactivity at levels near background are small and peak doses for radionuclides of interest in decommissioning occur within 1000 years, long term modeling thousands of years into the future of doses that are near background may be virtually meaningless.

Id.

Thus, the Commission has explicitly rejected the argument that dose assessments should be conducted depending on the hazardous life of the nuclide at issue. The 1,000-year time period is therefore intended to apply to *all* facilities covered by the regulation, and *all* radionuclides residing at a given site.[30] A contention which "advocate[s] stricter requirements than those

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[30] Petitioner cites the Final Rule as intending to apply the rule only to short-lived radionuclides and agreeing that for long-lived nuclides "future calculations beyond 1000 years would be valuable." Petition at 43. Such an interpretation of the Final Rule totally mischaracterizes the Commission's position. What the Commission actually said was:

> Unlike analyses of situations where *large quantities* of long-lived radioactive material may be involved (e.g., a *high-level waste repository*) and where distant future calculations *may* provide some insight into consequences,

Footnote continued on next page

imposed by the regulations" is "an impermissible collateral attack on the Commission's rules" and must be rejected. *Seabrook*, LBP-82-106, 16 NRC at 1656; *see also Palo Verde*, LBP-91-19, 33 NRC at 410. Contention 6 fits that standard perfectly. It is an impermissible challenge to the Commission's rules and must be rejected. 10 C.F.R. § 2.335(a).

2. Contention 6 has an insufficient basis

Contention 6 states that the Low Level Radioactive Waste Policy Act ("LLRWPA") requires the "permanent isolation of low-level radioactive waste pursuant to the requirements established by the [NRC]." Petition at 42. Petitioner provides no authority indicating that the LLRWPA, whose purpose is to provide federal authority for the states to establish regional compacts for the disposal of low-level radioactive waste, *see* 42 U.S.C. § 2021d, governs the requirements for the termination of an NRC materials license. It does not. As the Notice that convened this proceeding makes clear:

> However, before approving the proposed amendment, the NRC will need to make the findings required by the Atomic Energy Act of 1954, as amended, and NRC's regulations.

71 Fed. Reg. at 66,986. It is indisputable that the NRC is reviewing the Shieldalloy DP only pursuant to its authority under the AEA and the regulations it has promulgated to carry out its authority, including 10 C.F.R. § 20.1401(d). Thus, Petitioner has failed to provide a sufficient factual predicate supporting Contention 6. A contention lacking in a factual basis is inadmissible. 10 C.F.R. §2.309(f)(1)(ii).

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in the analysis for decommissioning . . . long term modeling thousands of years into the future of doses that are near background may be virtually meaningless.

62 Fed. Reg. at 39,083 (emphasis added). The Commission clearly did not intend to require sites like the Newfield Plant (which have nothing in common with a high-level waste repository) to perform dose modeling thousands -- or billions -- of years into the future.

3. Contention 6 does not controvert the DP

Contention 6 fails to controvert the DP and fails to show that a genuine dispute exists with the DP on a material law or fact. 10 C.F.R. § 2.309(f)(vi). Petitioner does not dispute (in this contention) the accuracy of the dose modeling contained in the DP, or claim that the DP is lacking in required information. All that Petitioner claims here is that a dose modeling assessment for a period in excess of that required by the NRC's rules should have been performed. As discussed above, this claim is an impermissible challenge to the NRC's rules. Such an impermissible challenge also fails to show that any genuine dispute exists with the DP.

For these reasons, Contention 6 is inadmissible.

G. Contention 7 (Cost Benefit Analysis)

Petitioner's Contention 7 asserts:

> Shieldalloy has failed to demonstrate that offsite disposal will cause net public or environmental harm or that residual radioactivity from onsite disposal is as low as reasonably achievable ("ALARA").

Petition at 46. Petitioner in essence contends that the cost-benefit analysis and comparison of the proposed remediation alternative versus one that would ship the waste offsite is flawed because it does not properly assess the costs and benefits of each alternative. As will be shown below, the contention lacks an adequate basis; ignores, mischaracterizes and does not challenge the DP; and impermissibly challenges the NRC rules. Accordingly, it is inadmissible.

1. Contention 7 does not controvert the DP

The specific claim made in Contention 7, according to Petitioner, is that Shieldalloy

> did not address the question of whether offsite disposal of its radioactive waste will cause net public or environmental harm by disposing the waste offsite at a licensed facility rather than disposing the materials onsite. Goodman Report at page 15. Furthermore, Shieldalloy has failed to conduct an ALARA analysis. Id.

> Therefore, Shieldalloy has not demonstrated that the proposed onsite disposal will reduce residual radioactivity to levels that are ALARA.

Petition at 46-47. Taken at face value, the Contention raises but two issues: (1) whether the evaluation of the offsite disposal alternative addresses the question whether such disposal will cause net public or environmental harm, and (2) whether Shieldalloy performed an ALARA analysis.

The first issue is whether the DP's consideration of the offsite disposal alternative "will cause net public or environmental harm." Petition at 50. This claim is both factually erroneous and inconsequential. The claim is erroneous because the DP (in Chapter 7) *does* assess the public or environmental harm posed by the offsite disposal alternative. In addition, the ER discusses environmental benefits and adverse impacts of each of the alternatives considered, including offsite transportation. ER Section 2 at 2-1 to 2-3 and Section 8 at 8-1 to 8-3. Table 2-1 of the ER contains a detailed comparison of all three alternatives considered: (the long term control alternative proposed in the DP (identified as "LTC" in the table); a "no action" alternative (identified as license continuation or "LC"); and offsite disposal of the waste (identified as license termination or "LT"). The LT column of the table evaluates the benefits *and costs* of the offsite disposal alternative, including the public health and safety costs of shipping the waste offsite (described as "[g]reater potential for off-site impacts to public health and safety due to off-site transport of licensed materials to Utah for disposal and potential for accidents during transport"), the socio-economic impacts (described as "there will be no or limited economic benefits associated with the transport and off-site disposal of the licensed materials"), and other impacts to land use, transportation, geology and soil, water resources, ecological resources, air quality, noise, historical and cultural resources, visual/scenic resources, and waste management. Therefore, contrary to the contention, the benefits *and* adverse impacts

of the offsite disposal alternative are addressed in the DP. This analysis is supplemented by the ALARA analysis in Section 7 of the DP, which presents a cost-benefit analysis of the three alternatives that considers risks associated with construction, transportation and disposal, radiological risks, and other factors including environmental impacts.

Petitioner's claim that the net public or environmental harm of the offsite disposal alternative should have been considered is also inconsequential because the cost/benefit analysis presented in Section 7.4 of the DP shows that the Long Term Control alternative is less costly (by over $55 million) than the offsite transportation (i.e., License Termination) alternative. Section 7.4 of the DP also shows that the net public harm from radiation exposure is greater for the offsite disposal option. Furthermore, Section 7.3.4 of the DP shows that the quantified non-radiological risks associated with the offsite disposal option exceed that for the Long Term Control alternative, thus the net public harm would be greater.

The second part of the contention, which alleges that Shieldalloy "failed to conduct an ALARA analysis" is also patently wrong. Chapter 7 of the DP, entitled "ALARA Analysis" contains the very analysis that Petitioner claims is missing.

Contention 7 also includes (although this does not appear in the description of the contention or its basis) a series of discrete criticisms of the ALARA analysis performed by DP. As will be shown, none of those criticisms are valid. In addition, Petitioner does not claim that those alleged deficiencies negate the results of the DP's ALARA analysis, which are that the alternative selected in the DP (long term control) results in lower radiation exposures, lower non-

radiological risks and lower costs than the offsite disposal alternative.[31] Therefore Petitioner's criticisms, even if valid, are inconsequential and do not raise a material dispute with the DP.

a. ALARA analysis only considers costs of reducing residual radioactivity

Petitioner asserts that the DP "only considers the costs of reducing residual radioactivity," whereas "[a]n ALARA analysis is required to also consider the benefits, including the collective dose averted." Petition at 49. In fact, the DP includes an ALARA analysis that considers and quantifies the collective dose averted. DP Section 7.4 at 91.[32] Also, as described earlier, the ER discusses environmental benefits and adverse impacts of each of the three alternatives and provides a comparative analysis of the environmental benefits and adverse impacts of all three. *See* ER, Table 2-1.

b. No consideration of drinking water pathway

The Petition claims (at page 49) that "[i]n order for the averted dose to be calculated, the drinking water pathway must be included for each alternative since groundwater contamination is likely if the DP is implemented." This claim is a mere repetition of the allegation that the groundwater exposure pathway should be included in the TEDE calculations. It is invalid for the reasons stated in response to Contention 5.

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[31] As noted, the DP compares Shieldalloy's proposal ("LTC Alternative") with offsite disposal ("LT Alternative") and finds that the LT Alternative results in more radiation exposure and higher cost. Only if the LT Alternative resulted in lower dose would its higher cost be justified by an ALARA analysis. While the Petition catalogs a number of issues with the ALARA analysis in the DP, none of the Petition's issues change the fundamental comparison that the LT Alternative results in higher anticipated dose at a higher cost. A material issue concerning the DP's ALARA would be raised only if the LT Alternative was either shown to result in a lower collective dose than the LTC Alternative or be significantly less expensive. Neither situation exists.

[32] Section 7.4 of the DP includes a table entitled Cost Benefit Analysis summary. One of the columns in that table is the "collective dose" in person-rem for each alternative. The collective dose averted is a comparative value, that is obtained by subtracting the collective dose for one alternative from that of the other. The collective dose averted of the LTC alternative, when compared to the transportation (LT) alternative is 344 – 193 = 151 person-rem. The collective dose averted by choosing the LTC alternative over the "no-action" (LC) alternative is 828 – 193 = 635 person-rem.

c. Insufficient time period in TEDE computation

The Petition further claims that, "[s]ince the material will remain radioactive in perpetuity, the length of time for modeling should be increased past 1000 years." *Id.* This claim is invalid for the reasons described in response to Contention 6. It is also impermissibly vague because it fails to specify by how much the length of time for modeling should be increased.

d. Higher cost estimate for offsite transportation alternative

"The costs considered by the DP for offsite disposal are higher than was actually quoted by the disposal facility. The DP considers a cost of $62,864,543. [DP Supplement, Appendix B] at Table 17.15. However, Energy Solutions has repeatedly quoted a price of $33 million for a turnkey operation. Exh. A. Adding a 25% contingency required by the NRC brings it to $41,250,000." Petition at 49-50. Even assuming that the LT Alternative is $41 million,[33] the LTC Alternative is still significantly less costly. DP Supplement, Appendix B at Table 17.14 (identifying the cost for the LTC Alternative as $8,060,930). The Petition's issue, even if assumed valid, does not raise a material dispute with the DP.

e. Discussion of radiation risks

"The whole discussion of radiation risks is misleading." Petition at 50. That blanket assertion is followed by two pages of discussion whose relevance is unclear. Apparently, Petitioner takes the view that the ALARA cost-benefit analysis should be based on the linear-no-threshold (LNT) dose-response relationship. Petition at 50-51. This issue does not raise a material dispute with the DP because the analysis in the DP *is* based on an LNT hypothesis. DP Section 7.2.1 at 76-77.

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[33] The estimate quoted by Petitioner for offsite disposal is actually not comparable to the DP estimate for the offsite disposal alternative, because the LT costs computed by Shieldalloy include additional required costs, such as the cost of the final status survey. *See* DP Table 17.15.

f. Regulatory costs avoided

"The benefits of unrestricted use versus restricted use should include the Regulatory Costs Avoided." Petition at 52. From that proposition, Petitioner infers that "[i]ncluded in these costs are additional licensing fees to develop an EIS and costs associated with public meetings, to name a few. ... The DP should include the costs associated with two years of NRC review of the DP. Creation of a new disposal site at the SMC facility in Newfield will require the additional expenditure of human resources and funds to regulate and maintain an additional disposal facility in perpetuity. These costs should be considered in the DP." *Id.*

The Petition cites no authority for its claim that these "regulatory" costs (plus the unnamed others that Petitioner suggests exist) should be included in the ALARA analysis. This is not surprising because the costs of the regulatory reviews that are required before the DP is accepted for implementation have nothing to do with the cost of implementing the DP, and there is no requirement to include the cost of securing DP approval in any DP analysis.[34] Furthermore, the Petition does not identify the magnitude of these costs and does not suggest that including those costs would tilt the cost-benefit computation towards making the LTC alternative more expensive than the LT alternative.

In developing the cost comparisons between the various alternatives, the DP addresses all applicable cost factors specified in NUREG-1757, including setting aside a trust fund to regulate,

[34] Petitioner also accuses the NRC of having "already violated its own guidance by conducting these [public] meetings and starting the EIS process without first determining if the site complies with the requirements in 10 C.F.R. 20.1403(a)." Petition at 52. The Petition does not identify what regulation or guidance requires a determination under 10 C.F.R. § 20.1403(a) prior to starting the preparation of an EIS. In fact, there is no such guidance. NEPA requires the consideration of environmental impacts whenever an agency considers a major Federal action significantly affecting the quality of the human environment. 42 U.S.C. § 4332(C). The NRC regulations implementing NEPA call for the preparation of an EIS if the Commission determines that the proposed action "is a major Commission action significantly affecting the quality of the human environment." 10 C.F.R. § 51.20(b)(14). The NRC has made a determination in this case that approval of the DP is an action calling for the preparation of an EIS. Notice, 71 Fed. Reg. at 66,986. Petitioner's charge is unfounded.

monitor and maintain the Newfield Plant site in perpetuity under the LTC Alternative. DP Supplement, Appendix B at Table 17.14. This allegation, like the others, raises no dispute with the Licensee on a material issue.

In short, none of the assertions in Contention 7 raise a genuine dispute with Shieldalloy on a material issue of law or fact. The contention should be rejected.

H. Contention 8 (Financial Assurance)

Petitioner's Contention 8 asserts:

The SMC DP fails to provide sufficient financial assurance.

Petition at 54. Contention 8 alleges that the financial assurance mechanism provided in the DP is inadequate because it (1) fails to consider inflation, and (2) fails to provide adequate funds to undertake remedial actions should they be required. The contention fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and is therefore inadmissible.

1. Contention 8 incorrectly asserts the DP does not consider inflation

The Petition asserts that the DP does not provide sufficient financial assurance "because it fails to consider inflation." Petition at 56. The Petition is simply wrong. The DP does consider inflation and takes it into account by performing a present value analysis using a "return on investment" ("ROI") of 1%. DP Supplement, Appendix J, Section 15.1 at 1.

The DP's use of an ROI of 1% is consistent with the NRC guidance in NUREG-1757, which states: "The licensee should assume 1 % return on investment (consistent with 10 C.F.R. Part 40, Appendix A)." NUREG-1757, Vol. 1, Appendix M, Section M.3.9 at M-15. The one percent return represents an assumed "annual real interest rate." 10 C.F.R. Part 40, Appendix A, Criterion 10. A real interest rate is defined as "an interest rate that has been adjusted to remove the effect of expected or actual inflation." Office of Management and Budget, Circular A-94,

Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs at 18. Thus, inflation is addressed in the DP present worth cost analysis through the use of a real interest rate.[35]

Furthermore, the Petition does not identify what inflation rate should be assumed in the financial analyses, or what the proper rate of return on trust fund investments should be. The DP uses a rate of return that is adjusted for inflation and is consistent with NRC guidance. Petitioner does not propose any alternative approach.[36]

2. Contention 8 asserts that the DP financial assurance does not cover certain costs but those costs are either provided for or need not be

The Petition asserts that two costs are not covered by financial assurance. The Petition's asserted financial assurance deficiencies and the associated responses are:

a. Cost of remediation of releases to groundwater. Petitioner asserts the DP does not provide sufficient funds to remedy the escape at some point in the future of radionuclides from the cap into the groundwater. Petition at 56. However, in seeking that no releases of radionuclides reach the groundwater, Petitioner is impermissibly challenging the NRC regulations. *See* response to Contentions 1 through 3 above. In addition, the groundwater is not a credible pathway for radioactive doses to the population. *See* response to Contention 5.

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[35] The Petition states: "Over the past 50 years inflation has dramatically increased the cost of goods and services." Petition at 56. While this is true, investments have also earned a consistent rate of return, which has exceeded the rate of inflation, over the past 50 years. That is why the NRC guidance calls for the use of a "real rate of return" in financial assurance computations.

[36] The Petition also states the DP fails to provide an ALARA analysis because it fails to consider inflation. Petition at 56. The DP does consider inflation in that the costs for each of the three disposal alternatives used in the analysis were taken from Tables 17.14, 17.15 and 17.16 (*see* Section 7.3.10 of the DP). Accordingly, the claim that inflation considerations should have been factored into the ALARA analysis raises no genuine dispute with the DP.

Therefore, financial assurance does not need to be provided to remedy releases to the groundwater.

b. Contractor Profit. The Petition incorrectly asserts that the DP cost estimates do not consider contractor profit: "The Table 17.14 Cost Estimate for the LTC Alternative does not provide sufficient funding to support a cost plus profit arrangement and therefore does not establish sufficient financial assurance." Petition at 57. Petitioner has apparently overlooked that the referenced table includes a column for "O&P." DP Supplement, Appendix B at Table 17.14. The DP specifically states: "Unit costs presented in the cost estimates represent combined materials, labor, equipment, and overhead and profit (O&P) costs. For cost data sources that did not include O&P, a value equal to 25% of the combined materials, labor and equipment cost was used to represent O&P." DP § 15.1 at 150. Thus, the DP's financial analysis does consider potential cost plus profit arrangements.

The contention therefore does not identify any deficiency in the financial assurance provisions in the DP that raises a genuine dispute with Licensee on a material issue. Contention 8 must be dismissed. 10 C.F.R. § 2.309(f)(1)(vi).

I. Contention 9 (Site Use Restrictions)

Petitioner's Contention 9 asserts:

> The SMC DP misstates existing site use restrictions and therefore mischaracterizes the site and exposure scenarios.

Petition at 57. The contention fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1) (v) and (vi) and is therefore inadmissible.

1. Contention 9 does not controvert the DP

The DP does not misstate the site use restrictions. The Petition itself acknowledges the existence of three such restrictions: (a) current restrictions due to natural resource restoration, (b) potential residential use restrictions due to chemically contaminated soil, and (c) the proximity to the Pinelands National Reserve. Petition at 58-59. The Petition does not claim that these restrictions are incorrectly described in the DP, but argues that "these land use restrictions are only institutional controls that are considered to disappear under an 'all controls fail' scenario." Petition at 59.

The Petition misunderstands the dose modeling scenarios. The DP appropriately considers the existing land use restrictions in determining applicable exposure scenarios when institutional controls are in place. In addition, "Section 5.3 describes 'reasonably likely' scenarios for both the unrestricted and restricted areas of the site, and the 'less likely' scenarios for the restricted area in the event that all protective controls fail." DP Rev. 1a at 34. The exposure scenarios when institutional controls fail are (1) a recreational hunter, (2) a suburban resident, (3) a barrier excavator, and (4) an industrial worker. *Id.*, Section 5.3.3 at 57. These scenarios do not consider land use restrictions.[37] The DP analysis is thus consistent with Petitioner's assertion that land use controls do not apply when institutional controls fail, and the claim that the DP misstates existing site use restrictions does not raise a genuine dispute with Licensee on a material issue. 10 C.F.R. § 2.309(f)(1)(vi).

[37] In fact, one of the exposure scenarios assumed is that of a hypothetical family that occupies a house constructed near (1,000 feet) from the restricted area. DP, Rev. 1a, Section 5.3.3.2.

2. The allegations in Contention 9 are speculative

The Petition contends that the future existence of site use restrictions can not be assumed because "final decisions [have not] been made with respect to the nature and extent of cleanup of chemical contamination at the facility and whether some or all of the Newfield site soil will be restricted in use after chemical cleanup." Petition at 59. It is telling, however, that the witness on which Petitioner relies for making the assertions that no final decisions have been made with respect to the extent of the cleanup of the Newfield site is the Case Manager of the NJDEP's Bureau of Case Management, "responsible for oversight and coordination hazardous site remediation pursuant to federal, state and local environmental laws." Resume of Donna L. Gaffigan, attached to the Petition. If the head of the program that will oversee the potential remediation of the Newfield Plant site admits that final decisions have not been made as to the extent of cleanup of chemical contamination at the site (*see* Petition, Declaration of Donna L. Gaffigan, at ¶ 9), she is in no position to opine as to what the status of the site after remediation will be, and her assertion (*see id.*) that the site might be released for unrestricted use (including residential) is only unvarnished speculation.[38]

On the other hand, there appear to be formidable obstacles to implementing a remediation program that would result in the site being released for unrestricted use. For example, the ER states: "The elevated noncarcinogenic risk associated with future residential use of the site and associated exposures to soils and dust was mainly attributable to vanadium." ER § 3.11.2.2 at 3-78. Petitioner does not contest that such vanadium levels exist nor discusses how vanadium contamination will be remediated to allow residential use of the land. In addition,

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[38] By the same token, Ms. Gaffigan's assertion that "with properly managed engineering and institutional controls of areas with residual contamination, no future use of the facility, including residential, is precluded" (*id.*) is only a meaningless generality. The issue is not what *could* theoretically be done, but what *will* be.

benzo(a)pyrene, PCBs, arsenic, beryllium, copper, lead, and nickel were all detected in surface soils at levels exceeding New Jersey non-residential direct contact soil cleanup criteria. ER Section 3.11.2.1 at 3-76 and 3-77. (Non-residential direct contact soil cleanup criteria are less stringent than are the residential criteria.) Petititioner does not address these conditions and does not explain how they would be remediated to allow residential use of the land.

The DP also states that the remediation process is currently proceeding towards retaining restrictions that allow only industrial use of the site. "The FS developed for soils at the SMC facility under CERCLA includes a recommended remedial action that NJDEP has reviewed and generally concurred with through comments issued on the FS document." *Id.* The institutional controls would include the establishment of a Declaration of Environmental Restrictions (DER) under NJSA 58:10B-13 and NJAC 7:26E-8. *Id.* Petitioner does not contest this assessment in the DP and does not seek to explain why it is unreasonable to assume that these site use restrictions will remain in place as long as institutional controls are in effect.

For that reason, the claim in Contention 9 that cleanup of the Newfield site could lead to release of the site for unrestricted use is wholly speculative and inconsistent with the uncontested facts stated in the DP. Therefore, such a claim and the declaration on which it stands must be rejected as not providing facts or expert opinions that support the contention. 10 C.F.R. § 2.309(f)(1)(v).

Contention 9 does not meet admissibility requirements and must be rejected.

Contention 10 (Groundwater Protection)

Petitioner's Contention 10 asserts:

> The SMC DP proposes a LTC disposal system design which is not protective of groundwater or health.

Petition at 60. The thrust of this contention (which is for the most part repetitive of other contentions already addressed) is that the DP's exclusion of groundwater as a credible exposure pathway is erroneous. The contention, however, fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1)(vi) and challenges the NRC regulations. Thus, it is inadmissible.

1. Contention 10 assertion's that groundwater should be considered as a credible exposure pathway does not raise a genuine dispute with the DP

Contention 10 recounts several of the reasons presented in the DP for why groundwater is not a credible dose exposure pathway and rejects them as "incorrect or unsupported." The grounds for this rejection are stated to be: [39]

- *The DP is contradictory as to whether a membrane will be present to prevent water infiltration through the buried materials.* Petition at 61. However, the response to Contention 3 explained that the DP does not feature use of a geomembrane in the engineered barrier. DP Supplement, Attachment 1 at 7.
- *An NRC official stated that the engineered barrier will be designed to allow rainwater infiltration.* Petition at 61. However, regardless of what that official may have said, the engineered barrier proposed in the DP is designed neither to "prevent" nor to "allow" water infiltration but to prevent exposure to the underlying materials and to control erosion. DP Supplement, Appendix D.
- *A permeable engineered barrier allows the potential leaching of contaminants from the buried materials directly into the groundwater.* Petition at 61. However, as noted in the response to Contention 3, the main purposes of the engineered

[39] Most of these issues are repetitive of concerns raised in Contentions 1, 2, 3 and 5. As shown in the responses to those contentions, these reiterated issues either misconstrue the DP or are irrelevant to the analysis it presents.

barrier are to control erosion and prevent access to the underlying materials in order to avoid radiation exposure and deter scavenging. It was not designed to control rainwater infiltration.

- *No liner is proposed beneath the contaminated material, and the material sites* [sic] *on the native sandy and very permeable soil. Id.* It is correct but immaterial in that no liner is used at all for the engineered barrier. The characterization of the native soil beneath the material as "sandy" and "very permeable" is impermissibly vague.

- *There were "problems" with the leachability analyses conducted by Shieldalloy on the slags and the baghouse dust. Id.* at 61-62. Those problems are said to include:

    - *Failure to analyze radioactively contaminated soils and building materials which will be buried under the engineered barrier. Id.* at 62. As described in Sections 4.4.1 and 4.4.2 of the DP, the magnitude of the residual radioactivity associated with the excavated soils from the Haul Road remediation and the demolition concrete from the removal of the baghouses and process buildings is trivial. For the Haul Road, the primary contributor is residual slag, which would exhibit the same low leachability characteristics as the other slag in the Storage Yard (Section 4.4.1 at 27). For the demolition concrete, the residual radioactivity is "in the range of background" (Section 4.4.1 at 29). Therefore, an assessment of the leachability characteristics of these materials would not improve the quality of the dose modeling for the DP.

- *Failure to analyze samples of materials that will be buried to determine if they are hazardous waste and banned from land disposal.* Petition at 62. However, hazardous waste materials are contaminated but not radioactive. *See* 40 C.F.R. § 261.4(4). Therefore, they are out of the scope of this proceeding. *See* response to Contention 2.

- *Failure to submit a sufficient number of samples to be representative of the materials to be disposed of under the engineered barrier.* Petition at 62. However, as noted in the response to Contention 2, the DP reports that analysis of the radiological constituents in multiple slag samples demonstrate that their concentrations within the total volume present in the Storage Yard are consistent. DP Table 17.7 n.168.

- *Potential leaching of radium from the slag and "contradictory" statements in the DP as to whether radionuclides will leach from the slag.* Petition at 62. However, the DP never asserts that the slag does *not* leach. To the contrary, the DP considers that the slag is essentially insoluble and that leaching, rather than dissolution of the slag, is the controlling mechanism for potential transport of radioactivity. DP § 5.4.3.3 at 78.

- *Shieldalloy states that the groundwater at the facility is already contaminated and suggests that it should therefore be essentially DISREGARDED as not worthy of protection from contamination.* Petition at 62, emphasis in original. However, those statements appear nowhere in the DP. In reality, groundwater was not considered in the dose assessment because Shieldalloy performed site-specific groundwater modeling that showed that the groundwater pathway would have no

significant radiological impact on hypothetical receptors. Shieldalloy letter to the NRC dated June 30, 2006 submitting Revision 1a to the DP, Attachment 1 at 5.

- *It is incorrect to conclude that just because the groundwater is already contaminated it should be excluded as an exposure pathway.* Petition at 63. However, Shieldalloy also performed a detailed analysis that shows that the rate of radionuclide transport from the insoluble slag to the groundwater and from there to a well one-hundred feet from the encapsulated pile would have no significant radiological impact to hypothetical receptors. DP Supplement, Attachment 1 at 5 and Appendix D. Therefore, the DP excludes evaluation of groundwater from detailed dose modeling because of its limited radiological significance.

- *The current municipal supply wells are located less than one mile from the Newfield site and draw water from the same aquifer. While those wells are upgradient from the site, transport of contamination towards and into potable wells is a real possibility over the next 1000 years.* Petition at 63. However, Petitioner provides no justification for its assertion that upgradient contamination "is a real possibility." Indeed, evaluation of the likelihood of such a scenario would require a very sophisticated model, and long-term uncertainties in regional hydrogeologic characteristics would result in significant uncertainties associated with the results of that model. For that reason, Petitioner's assertion is not only unsupported but highly speculative. By contrast, the evaluation of the potential impacts on groundwater (DP Supplement, Attachment 1 at 5 and Appendix D) demonstrates that the radiological impacts to a hypothetical receptor that drinks

from a well that is 100 feet from the capped pile are not significant. It is unreasonable to assume that there will be a greater potential for exposure to impacted groundwater that is drawn from wells that are hundreds of yards farther away from the pile and are routinely tested and assured compliant with the safe drinking water standards (i.e., 40 C.F.R. § 141) before their water is released for public consumption.

For these reasons, Petitioner's arguments as to why the groundwater pathway must be considered do not raise a genuine dispute with the Licensee on material issues of fact. Contention 10 fails to satisfy the requirements of 10 C.F.R. § 2.309(f)(1) (vi).

2. The assertion that the DP is not protective of health is not supported

The second part of Contention 10 is essentially a plea for preserving the integrity of the groundwater beneath the Newfield Plant site. The contention characterizes the groundwater as a valuable resource whose protection is "critical" and charges that the DP "fails to properly and fully consider and evaluate groundwater protection and future use." Petition at 63-64. In so arguing, Contention 10 -- like Contentions 1 through 3 -- seeks to advance the proposition that groundwater must be protected from any radioactive releases. As discussed more fully in response to Contention 1, a claim based on the proposition that *any* discharge of radionuclides into the groundwater is an impermissible challenge to the provisions in 10 C.F.R. § 20.1403 and is therefore untenable.

Contention 10 fails to meet admissibility requirements.

J. <u>Contention 11 (Surface Water Contamination)</u>

Petitioner's Contention 11 asserts:

> Residual radioactivity from SMC's operations in surface water and sediment is not adequately addressed in the DP.

Petition at 64. The contention fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iv), (v) and (vi) and is therefore inadmissible.

1. Contention 11 is not supported by facts or expert testimony

Contention 11 accurately cites, and does not contest, facts identified in the DP concerning residual radioactivity found in Hudson Branch surface water and sediment in sampling conducted in connection with the 1991 Site Characterization Survey (*see* response to Contention 4 above). The Petition correctly states: "Residual radioactivity has been identified in the Hudson's Branch as indicated in the DP Executive Summary and Appendix 19.9, Environmental Report. The data referenced is from a 1992 report which concluded that the radioactivity detected in the Hudson's Branch water and sediments is not significantly different from background." Petition at 65. No dispute with the DP is identified as to the status of the characterization of the minimal contamination of the surface water and sediment in the vicinity of the Newfield site.

The entire support for the contention is the following statement in the Gaffigan Declaration: "The full extent of contamination in the surface water and sediments was not evaluated in the DP nor is the potential impact from contaminated ground water discharging from the stream. The DP must include these media." Gaffigan Declaration at 9-10. The statement is merely conclusory and vague and offers no support for the affiants' assertion. It does not explain in what way the DP failed to evaluate the "full" extent of contamination in the surface water and sediments or the potential impact from groundwater discharged from the stream, nor what "full" is intended to mean, nor why the characterization provided in the DP is not "full." Nor does the statement explain why these matters "must" be included in the DP.

As noted earlier, such vague and conclusory assertions are insufficient to provide the "facts or expert opinions which support the requestor's/petitioner's position on the issue." 10 C.F.R. § 2.309(f)(1)(v); *USEC,* CLI-06-10, 63 NRC at 472. A statement "that simply alleges that some matter ought to be considered" does not provide a sufficient basis for an admissible contention. *Rancho Seco*, LBP-93-23, 38 NRC at 246. Contention 11 fails for lack of factual support.

2. The issue raised in Contention 11 is not material to the findings the NRC must make in order to approve the DP

Since Contention 11 does not take issue with the DP's discussion of the investigation of residual radioactive contamination in the Hudson's Branch water and sediments, the only grounds on which the contention may raise a genuine dispute with Shieldalloy on a material issue of fact or law are the assertion that "[i]t does not appear that sampling of the stream has been conducted since 1991," Petition at 65, and Ms. Gaffigan's assertion that "[t]he DP must include these media." Gaffigan Declaration at ¶19. However, no explanation is provided as to why such sampling must be conducted as part of the DP. Apparently, Petitioner's argument with respect to Contention 11 is the same as that raised in Contention 4, *i.e.*, that the DP must contain a "final status survey" containing a "full characterization" of the Newfield site before the DP is approved.

As explained in the response to Contention 4, a final status survey is only required "[a]s the final step in decommissioning," after the decommissioning is completed. 10 C.F.R. § 40.42(j)(2). The required NRC actions with respect to a site characterization survey are to "determine whether or not there is sufficient information to permit planning for site remediation that will be effective and will not endanger the remediation workers, to demonstrate that it is unlikely that significant quantities of residual radioactivity have gone undetected, and to provide

information that will be used to design the final status survey." NUREG-1757, Vol. 1, Rev. 2 at 15-8. The site characterization survey conducted in 1991 has already highlighted the need to address the Hudson Branch area during site-wide decommissioning, thus any further study of the surface water and sediments in that area is not material to the findings the NRC must make to approve the DP. 10 C.F.R. § 2.309(f)(1)(iv).[40]

3. Contention 11 does not raise a genuine dispute with Licensee on a material issue of fact or law

As discussed above, Petitioner differs with Shieldalloy only as to whether it is necessary to provide in the DP an updated characterization of the radioactive contamination in the Hudson Branch surface water and sediment. Since such an updated characterization is not required for the NRC to review the DP, Contention 11 does not raise a dispute with Licensee on a "material" issue of fact and the contention fails to satisfy the admissibility requirements of 10 C.F.R. § 2.309(f)(1)(vi).

The Petition raises no genuine dispute on a material issue of fact relevant to this proceeding.

K. Contention 12 (Protection Against Long Lived Nuclides)

Contention 12 reads

> The LTC License sought by Shieldalloy fails to adequately protect the public safety and health for materials containing long lived nuclides.

Petition at 66. Contention 12 is inadmissible because it is an impermissible attack on the Commission's rules. 10 C.F.R. § 2.335(a). The proposed contention also fails to satisfy the admissibility requirements of 10 C.F.R. §§ 2.309(f)(1)(i), (ii), and (vi).

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[40] As described in the response to Contention 4, a final status survey will be conducted as the final step of decommissioning of the Newfield Plant site. DP Section 14.3.1 at 137. That survey will cover all relevant areas, including the Hudson Branch surface water and sediment.

1. Contention 12 impermissibly challenges the NRC's rules.

Contention 12 argues that a long term control license, if issued to Shieldalloy, would "fail to provide adequate institutional controls to permanently isolate the low-level radioactive waste and protect the public health and safety," Petition at 67, "since neither Shieldalloy nor an independent third-party trustee can be expected to endure for the billions of years that the waste remains a radiological hazard." *Id.* at 69. In so arguing, Contention 12 impermissibly challenges the Commission's rules containing the "Criteria for license termination under restricted conditions" ("restricted use") at 10 C.F.R. § 20.1403. It also impermissibly challenges the Commission's rules containing the time period scope limitation for TEDE calculations at 10 C.F.R. § 20.1401(d).

The Commission's regulations on restricted use decommissioning provide in relevant part

> A site will be considered acceptable for license termination under restricted conditions if:
>
> (a) The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of § 20.1402 would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA. Determination of the levels which are ALARA must take into account consideration of any detriments, such as traffic accidents, expected to potentially result from decontamination and waste disposal;
>
> (b) The licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) per year;
>
> (c) The licensee has provided sufficient financial assurance to enable an independent third party. . .to assume and carry out responsibilities for any necessary control and maintenance
>
> * * *
>
> (d) The licensee has submitted a decommissioning plan or License Termination Plan (LTP) to the Commission. . . .

* * *

(e) Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either--

(1) 100 mrem (1 mSv) per year; or

(2) 500 mrem (5 mSv) per year provided the licensee—

* * *

(ii) Makes provisions for durable institutional controls;

(iii) Provides sufficient financial assurance. . . .

10 C.F.R. § 20.1403. Thus, a site maybe decommissioned under restricted use if it meets certain criteria, namely that (1) radiation levels are ALARA; (2) institutional controls are in place and will remain in effect to ensure that TEDE does not exceed 25 mrem per year; (3) the licensee has provided sufficient financial assurance to perform any control and maintenance responsibilities; and (4) should institutional controls no longer be in effect, TEDE would not exceed 100 mrem/year, or 500 mrem/year under certain circumstances. Further, when a licensee applies for restricted use decommissioning, it need only calculate the peak annual TEDE expected within the first 1,000 years after decommissioning. 10 C.F.R. § 20.1401(d). As discussed in response to Contention 6, neither Section 20.1403 nor Section 20.1401(d) are limited in their application based on the type of nuclides present at a site.

Contention 12 impermissibly challenges the Commission's restricted use (Section 20.1403) and TEDE (Section 20.1401(d)) regulations. It "asserts" that "it is self-evident that all controls will fail since neither Shieldalloy nor and [sic] independent third-party trustee can be expected to endure for the billions of years that the waste remains a radiological hazard." Petition at 69. It further asserts that the "intent of the decommissioning regulations is to limit the

release of sites containing long-lived nuclides to unrestricted release." *Id.* at 67. Contrary to Petitioner's arguments, the Commission does not require institutional controls to be in place for "billions" of years, nor does the Commission intend that the decommissioning of sites with long lived nuclides be limited to the unrestricted release option.

For decommissioned sites with relatively short lived nuclides, the Commission "has considered the effectiveness of institutional controls for up to 100 years," and "believes that institutional controls using relatively simple deed restrictions can provide reasonable assurance" that the TEDE will be below acceptable levels. Final Rule, 62 Fed. Reg. at 39,070. For sites with longer lived nuclides applying for restricted use decommissioning, the Commission explained:

> In a limited number of cases, in particular those involving large quantities of uranium and thorium contamination, the presence of long-lived nuclides at decommissioned sites will continue the potential for radiation exposure beyond the 100-year period. More 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.

Id. The "more stringent institutional controls" pointed to by the Commission are not required to last a billion years, as NJDEP would have it. Rather, the Commission rejected such long term institutional controls:

> Requiring absolute proof that such controls would endure over long periods of time would be difficult, and the Commission does not intend to require this of licensees. Rather, institutional controls should be established by the licensee with the objective of lasting 1000 years to be consistent with the time-frame used for [TEDE] calculations. . . .

Id. In short, Petitioner is seeking in Contention 12 to impose stricter requirements for the decommissioning of the Newfield Plant site than those provided in 10 C.F.R. §§ 20.1401(d) and 20.1403. A contention which "advocate[s] stricter requirements than those imposed by the

regulations" is "an impermissible collateral attack on the Commission's rules" and must be rejected. *Seabrook*,LBP-82-106, 16 NRC at 1656; *see also Palo Verde*, LBP-91-19, 33 NRC at 410. Contention 12 must be rejected. 10 C.F.R. § 2.335(a).

2. Contention 12 is impermissibly vague

The Petition fails to describe how a decommissioned Newfield Plant site under an LTC license would fail to "adequately protect the public safety and health."[41] Such broadly worded, non-specific challenges do not give rise to a litigable issue. 10 C.F.R. §§ 2.309(f)(1)(i); *Fansteel*, CLI-03-13, 58 NRC at 203; *GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 208 (2000).

3. Contention 12 lacks a sufficient basis

The Petition asserts that the "LTC license violates the [LLRWPA]" by failing to meet the requirements therein. Petition at 66. However, Petitioner provides no authority indicating that the LLRWPA, which is intended to provide federal authority for the states to establish regional compacts for the disposal of low-level radioactive waste, 42 U.S.C. § 2021d, governs the requirements for the termination of an NRC materials license. It does not. As discussed in the response to Contention 6, the NRC is reviewing the Shieldalloy DP solely pursuant to its authority under the Atomic Energy Act ("AEA"), and its regulations thereunder.

Petitioner likewise suggests that the NRC has failed in its "paramount responsibility" to protect the public health and safety, without pointing to any specific examples where NRC has

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[41] In seeking to explain how Contention 12 meets the specificity requirements of 10 C.F.R. § 2.309(f)(1)(i), Petitioner states: "[t]he LTC violates the Low-Level Radioactive Waste Policy Act ('LLRWPA'), the Atomic Energy Act ('AEA'), and the intent of the LTR." Petition at 66. Such a broad assertion that two major statutes and a regulation are being violated hardly adds any specificity to the contention.

failed in that duty. Petition at 66. As discussed above, a contention lacking in a factual basis is inadmissible. 10 C.F.R. §2.309(f)(1)(ii).

4. Contention 12 fails to controvert the DP

Contention 12 fails to controvert the DP and thus fails to show that a genuine dispute exists with the DP on a material law or fact. 10 C.F.R. § 2.309(f)(vi). Indeed, Petitioner fails to point to a single instance where the DP has not complied with the applicable requirements regarding institutional controls. Petitioner does not dispute that the institutional controls proposed in the DP are adequate under existing regulations and will last as long as required by the regulations. Rather, Petitioner claims that further institutional controls, not required by the NRC's rules, should be provided. As discussed above, this claim is an impermissible challenge to the NRC's rules. In addition, such a claim does not create a genuine dispute with Licensee on a material issue of fact or law. 10 C.F.R. § 2.309(f)(1)(vi).

Accordingly, Contention 12 should be rejected.

L. Contention 13 (License Termination)

Petitioner's Contention 13 asserts:

> The DP conflicts with the regulations regarding termination of the license upon decommissioning.

Petition at 69. Despite its wording, this contention seeks to raise two different issues, only one of which is addressed by the text of the contention and in Petitioner's statement under 10 C.F.R. § 2.309(f)(1)(i) of the issue of law or fact raised by the Contention:

> The DP seeks to amend Shieldalloy's current license to a LTC license upon decommissioning. DP rev. 1 page 155. However, amending its current license upon decommissioning would violate the regulatory provisions requiring termination of the license upon decommissioning.

Id. at 69. The first issue, which is described in the statement of the contention, is whether there is an inconsistency between the license termination rule and the approach proposed in the DP, under which the existing license for the Newfield Plant would be amended to a long term control license upon completion of decommissioning of the facility.

The second issue discussed in Contention 13, unrelated to the first, is whether the TEDE to an average member of the critical group would exceed regulatory limits once the DP is implemented. This second issue is a repetition of claims already asserted in several other contentions and is irrelevant to the contention as proffered.

The first aspect of Contention 13 is an erroneous interpretation of the regulations and constitutes an impermissible challenge to the NRC rules. The second aspect of the contention is a challenge to the NRC rules and also fails to satisfy the requirements of 10 C.F.R. §2.309(f)(1)(vi).

1. The first aspect of Contention 13 misinterprets NRC authority to indefinitely extend Shieldalloy's license and is an impermissible challenge to the NRC rules

Contention 13 argues that allowing the Newfield Plant license to remain in effect as an LTC license after decommissioning of the site is completed is inconsistent with the license termination rule. The grounds asserted in support of this argument are that the NRC regulations *require* that a facility license be terminated once the facility's decommissioning is completed. There is no such requirement. Therefore, the interpretation of the regulations propounded in the contention constitutes an impermissible challenge to the NRC rules.

Petitioner's theory is based on its interpretation of the definition of "decommissioning" in the source material license regulations, which is:

> *Decommission* means 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. § 40.4 (similar definitions are used for other types of nuclear facility licenses). Petitioner argues, without citing any supporting authority, that the definition of decommissioning includes both reducing the level of residual radioactivity to a level that permits releasing of the property for unrestricted or restricted use *and* terminating the license. Therefore, argues Petitioner, once you have "decommissioned" a facility, you must terminate its license. *See, e.g.*, Petition at 69. However, Petitioner misses the critical term in the definition, which is "permits." Decommissioning a facility is one of the actions that *allows* the NRC to terminate its license, but does not in itself *require* that the license be terminated. Put differently, accomplishing the decommissioning of a facility is a necessary, but not sufficient, condition for its license to be terminated. Petitioner's interpretation would turn the definition on its head, making a permissive action by the NRC into a mandatory one.

In addition, termination of a Part 40 license such as the one held by Shieldalloy requires that four criteria be satisfied:

> Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the Commission determines that:
>
> (1) Source material has been properly disposed;
>
> (2) Reasonable effort has been made to eliminate residual radioactive contamination, if present; and
>
> (3) (i) A radiation survey has been performed which demonstrates that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E, or for (uranium and thorium recovery) facilities, Criterion 6(6) of Appendix A to this part; or

(ii) Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with the criteria for decommissioning in 10 CFR part 20, subpart E, or for uranium milling (uranium and thorium recovery) facilities, Criterion 6(6) of Appendix A to this part.

(4) Records required by § 40.61(d) and (f) have been received.

10 C.F.R. § 40.42(k). Completion of decommissioning is intended to satisfy item (2), which is only one of the four relevant criteria. The permissive nature of the definition of decommissioning is consistent with the need for the NRC to make other determinations prior to terminating a source material license.[42]

Another argument raised by Petitioner in support of its claim that the granting of an LTC license is inconsistent with the LTR is that "[t]he conflict between the LTR and the LTC license for long-lived nuclides is admitted by the NRC" because of an NRC staff statement that the NRC did not envision long-lasting NRC oversight of a decommissioned site at the time the LTR was issued. Petition at 72, *citing* SECY-03-0069 (2003) at 27. However, the quoted statement is cited out of context and does not support, but actually refutes, Petitioner's position.

The SECY paper at issue was a Staff analysis of issues associated with implementing the LTR. In Section 4.2.2 of the paper, the Staff proposes "[a]dding a new option for restricting use by an NRC possession-only specific license after completion of remediation." SECY-03-0069 at 25. Under that option (which became the LTC license) "the possession-only license acts as an institutional control to maintain the restrictions necessary to meet the LTR criteria." *Id.* The

[42] Indeed, at the time it issued the regulations on license termination, the NRC confirmed that completion of decommissioning would not in itself result in the termination of a license. The NRC stated: "When the NRC has determined that decommissioning has been completed in a satisfactory manner, the NRC will relieve the licensee of license obligations by terminating the license. All licenses remain in effect until formally terminated by the NRC." *Final. Rule, Timeliness in Decommissioning of Materials Facilities*, 59 Fed. Reg. 36,026, 36,028 (1994).

Staff's discussion of that option goes on to examine the perceived benefits and detriments of implementing it. Among the perceived detriments was the following:

> 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. Therefore, such a permanent oversight role for long-term stewardship is not a new role for NRC, as an agency.

SECY-03-0069 at 27. Thus, although the institution of an LTC license with the attendant need for continued NRC oversight for long periods of time may not have been envisioned when the LTR was approved, such an arrangement "is not a new role for the NRC" and is not inconsistent with the LTR. The Commission approved the Staff's proposal to allow long term control licenses subject to NRC oversight. SRM responding to SECY-03-0069, dated Nov. 17, 2003.

For these reasons, Petitioner's assertion that completing decommissioning requires terminating the license is an impermissible challenge to the regulations in 10 C.F.R. §§ 40.40 and 40.42(k) and this aspect of Contention 13 must be rejected. 10 C.F.R. § 2.335(a).

2. The second aspect of Contention 13 does not establish a dispute with Licensee on a material issue

The Petition asserts two arguments in support of the second aspect of Contention 13, *i.e.*, that implementation of the DP will not lead to a TEDE to an average member of the critical group within regulatory limits. Neither argument is new, and neither establishes a genuine dispute with the DP.

First, the Petition alleges that "[a]s discussed in Contention 1, the 1000 year modeling in this case violates the AEA, the LLRWPA, and the LTR." Petition at 72. As explained above in the responses to Contentions 1, 6 and 12, modeling for 1,000 years is prescribed by the NRC

regulations and in contesting the duration of the dose modeling Petitioner is raising an impermissible challenge to the NRC rules.

Second, the Petition alleges that "[a]s discussed in greater detail in Contention 5, when realistic assumptions are used, including the dose contributions from the drinking water pathway, but even excluding the gamma exposure pathway, modeling indicates a TEDE of 1,718 mrem per year at year 800. Goodman Dec. 11." Petition at 72. As discussed above in response to Contention 5, the Petition provides inadequate basis in fact or expert opinion to identify how estimated doses could be three orders of magnitude higher than those described in the DP and does not raise a material dispute with Licensee in that regard.

Accordingly, both aspects of Contention 13 raise inadmissible issues and the contention should be rejected in its entirety.

M. Contention 14 (Public Input)

Contention 14 asserts:

> Shieldalloy failed to adequately elicit or consider public input on the decommissioning proposal.

Petition at 73. As further clarified in Petitioner's definition of the specific issue being raised, the issue raised by Contention 14 is:

> The DP failed to consider public input through the Site Specific Advisory Board. Furthermore, the DP fails to consider the strong and nearly universal public opposition to the DP.

Id. The contention challenges the NRC rules and fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(iii), (iv) and (vi). It is therefore inadmissible.

1. Contention 14 challenges the NRC rules

When a Licensee seeks restricted release of a facility, the NRC regulations require the Licensee to obtain public input on four discrete issues. Specifically:

> . . .The licensee shall document in the LTP or decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and incorporated, as appropriate, following analysis of that advice.
>
> (1) Licensees proposing to decommission by restricting use of the site shall seek advice from such affected parties regarding the following matters concerning the proposed decommissioning--
>
> (i) Whether provisions for institutional controls proposed by the licensee:
>
> (A) Will provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 25 mrem (0.25 mSv) TEDE per year;
>
> (B) Will be enforceable; and
>
> (C) Will not impose undue burdens on the local community or other affected parties.
>
> (ii) Whether the licensee has provided 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;
>
> (2) In seeking advice on the issues identified in § 20.1403(d)(1), the licensee shall provide for:
>
> (i) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;
>
> (ii) An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and
>
> (iii) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of

> the participants on the issues and the extent of agreement and disagreement among the participants on the issues[.]

10 C.F.R. § 20.1403(d). The Petition asserts that "[t]he LTR requires Shieldalloy to elicit public advice on the decommissioning plan and requires the advice to be incorporated into the DP. 10 C.F.R. § 20.1403(d)." Petition at 74.

Contention 14 misconstrues the regulation on two respects. *First*, as indicated above, a licensee is required to obtain public input on four specific issues, not (as claimed by Petitioner) on the entire decommissioning plan. *Second*, a licensee is required to analyze the public advice received on those four issues and incorporate the advice, *as appropriate*. 10 C.F.R. § 20.1403(d), emphasis added. Thus, the claim that Shieldalloy failed to obtain input on areas of the DP other than the four specified in the regulation is a challenge to the rule. Likewise, the claim that Shieldalloy, after considering the advice received, *had* to incorporate it into the DP is also a challenge to the rule.[43] Contention 14 is invalid because it challenges the NRC rules in both of these areas.

2. Contention 14 does not controvert the DP Because the DP did Elicit Public Advice on the Relevant Issues

Petitioner charges that "Shieldalloy failed to adequately elicit public advice on their decommissioning plan." Petition at 75. However, as the Petition acknowledges, "Shieldalloy "convened four meetings of a Site Specific Advisory Board ('SSAB')." Petition at 75. Through the SSAB, Shieldalloy complied with the advice seeking requirements in Section (d)(2) of the LTR. Specifically:

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[43] In promulgating the LTR, the NRC stated that upon receiving public advice on the four specific issues, "the licensee will include the recommendations from these parties in the LTP or decommissioning plan and indicate how those recommendations were addressed along with the technical basis for dealing with them." Final Rule, 62 Fed. Reg. at 39,078. The NRC did not expect licensees to incorporate public comments that were inappropriate (for instance, those lacking an adequate basis).

a. Membership in the SSAB was open to individuals from a broad community cross-section expressing an interest in the DP. DP § 16.5.1 at 159.

b. The DP includes the minutes from the four meetings of the SSAB, and a transcript of the proceedings at the last of the meetings. DP, Appendix 19.7. These minutes and transcript were made publicly available. DP § 16.5.3 at 161 and n.108.

c. As the meeting minutes and transcript show, a comprehensive discussion of the four relevant issues was conducted at the SSAB meetings. DP §§ 16.5.2 and 16.5.3 at 160-161; DP Supplement, Attachment 1 at 9-11.

d. In addition to the meetings, comments were solicited on SSAB Input Forms. The comments received via completed SSAB Input Forms are reproduced in DP Appendix 19.8. Shieldalloy analyzed the comments. *See* DP §16.5.3 at 161 and DP Supplement, Attachment 1 at 9-11 and Appendix H § 16.5.4 at 24-25. As applicable, actions taken in response to those comments are also described. *Id.*

Despite these well documented actions by the SSAB, the Petition states "the SSAB failed to adequately elicit public advice on the proposed decommissioning." Petition at 75. The bases for that charge appear to be:

a. That "the SSAB never selected a chairperson or adopted a charter or operating procedures." Petition at 75. However, there are no requirements in the LTR for chairmanship, charter or operating procedures of the group selected to provide input to the decommissioning process. In fact, the NRC recognizes that small group discussions, rather than formally established bodies, can be more effective in obtaining public advice. Final Rule, 62 Fed. Reg. at 39,077. Rather than mandating specific procedures for obtaining public advice, the LTR

provides performance objectives for soliciting public advice in part to "allow licensees additional flexibility in determining the best methods for obtaining that advice based on site-specific considerations." *Id.* at 39,078. Petitioner had in the past raised this issue with the NRC, which responded that licensees are "afforded flexibility for implementing the guidance [from affected parties] as long as it meets the requirements of 10 CFR 20.1403." DP Appendix 19.7 (NRC letter to NJDEP dated January 28, 2005).

b. The Petition objects to Shieldalloy leading the SSAB meetings. "Shieldalloy's legal counsel conducted the meetings by simply advancing Shieldalloy's arguments in support of the decommissioning." Petition at 75. Petitioner's criticism is baseless. Tthe NRC envisions that licensees will explain the technical basis for licensees proposals on the four specific issues. "The licensee would present information to, and seek advice from, affected parties on the provisions for limiting the dose to meet the criteria in the rule (*e.g.* limiting use to commercial/industrial use with elimination of the resident pathway), how the restrictions would be enforced (*e.g.*, use of deed restrictions, engineered barriers, State or Federal control or ownership), the effect on the community, and the adequacy of the level of financial assurance (e.g., sufficient funds for maintenance of the deed or of fencing)." Final Rule, 62 Fed. Reg. at 39,077-78. Petitioner does not identify any other reasonable method to solicit meaningful public input.

c. The Petition states that "Shieldalloy failed to provide sufficient information to the SSAB members in order to provide advice on certain issues." Petition at 75. The Petition identifies only two situations in which insufficient information is alleged to have been provided. The first situation was that "the members could not provide advice on whether the proposed institutional controls would assure that an average member of the public would not incur a radiation dose in excess of 25 millirem Total Effective Dose Equivalent (TEDE)." *Id.* The

reason why such advice could not be rendered is said to be that Shieldalloy did not provide information as to "the characteristics of the slags, baghouse dust and other materials or the engineering design of the engineered barrier." Gaffigan Declaration at ¶ 5. In fact, Shieldalloy provided each member of the SSAB with several chapters of Rev. 0 of the DP, including the entirety of Chapter 4, "Radiological Status of the Facility," and the design of the engineered barrier for the site. DP Appendix 19.7. Thus, this charge is demonstrably without factual support.

The second situation is said to involve not providing sufficient information as to whether the $5 million financial assurance would be adequate to enable an independent third party to assume responsibility for the control and maintenance of the site. Petition at 76. The basis for this claim is that Shieldalloy "failed to provide sufficient information such as the engineering design of the proposed engineered barrier." Gaffigan Declaration at ¶ 6. Again, Shieldalloy did provide the design of the engineered barrier. DP Appendix 19.7.

Thus, the two instances cited of alleged failure to provide enough information to elicit comments from the public can be shown not to have happened. This claim does not raise a litigable issue.

3. Contention 14 does not controvert the DP because the DP did consider the advice provided by the public on the relevant issues

Contention 14 also claims that when advice was given by the public Shieldalloy failed to consider it. Two alleged instances of this situation are cited in the contention, as follows.

a. That the DP "fails to acknowledge the strong public opposition to the proposed onsite disposal." Petition at 76. General public sentiment about the DP is not one of the specific areas

as to which advice needs to be solicited or considered. Nevertheless, opposition to the proposal is acknowledged and discussed in the DP. DP Supplement, Appendix H § 16.5.4 at 25.

b. That where public opposition was acknowledged the DP "still fails to adequately address the particular opposition." Petition at 76-77. One of the two instances cited in the Petition is that "the SSAB advised that the institutional controls proposed will not be enforceable for the time period required, in perpetuity." Petition at 77. The Petition goes on to acknowledge that the DP responded to that advice, stating "that it is reasonable to assume that the Federal government will remain in perpetuity to enforce the provisions of the LTC license to require institutional controls. DP Rev. 1 page 164." *Id.* Thus, Petitioner admits that the DP acknowledged the comment and responded to it. Nothing else is required under the LTR: receiving and evaluating a comment does not imply that it has to be accepted.[44]

c. The other instance cited in which the DP allegedly acknowledges but does not "adequately" address a comment by the SSAB is that "while the DP acknowledges the SSAB comment that the institutional controls may prevent the development of the surrounding area and thus impose an unfair burden, DP Rev. 1 page 16-67 . . . [t]he DP simply responds that there will be no restrictions on the portion of the property that would be released for restricted [sic] use." Petition at 77-78.[45] This is another situation in which the DP duly considers a comment and

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[44] The DP addresses the potential for funding adequacy and default by stating that the LTC license would be reevaluated every five years, including assessing trust fund adequacy and that, in the event of default, the NRC would likely contract a third party to implement the LTC requirements. DP Supplement, Appendix H § 16.3.1 at 24.

[45] The DP actually states that Shieldalloy "intends to continue operating the Newfield facility and to serve as the LTC licensee. Other than the terms and conditions of the LTC license, there will be no restrictions on SMC's actions on use of the unrestricted portion of the property under this Decommissioning Plan because it will have been released for unrestricted use as part of the implementation of this decommissioning plan. This means that the unrestricted portion of the property may be put to any use whatsoever by SMC or by any successor organizations. Consequently, development of the Newfield site will not be hampered any more than development

Footnote continued on next page

responds to it, in full satisfaction of its obligation under the LTR. Petitioner just does not agree with the response. Providing a response with which the public agrees is not required by the LTR.

In short, the allegations in Contention 14 that public comments were precluded by Shieldalloy's failure to provide needed information or were received but not addressed adequately are shown to be erroneous by the information contained in the DP. Accordingly, Contention 14 does not raise a genuine dispute with the Licensee on a material issue of fact, and is therefore inadmissible.

N. Contention 15 (Onsite storage of long lived radionuclides)

Contention 15 reads:

> The LTC license sought by Shieldalloy conflicts with the regulations regarding the radiological criteria for unrestricted and restricted use.

Petition at 79. The Contention further asserts that the LTC license sought by Shieldalloy "conflicts with the intent of the LTR . . . because Shieldalloy is seeking to conduct onsite disposal of long-lived nuclides." *Id.* Contention 15 is inadmissible because it is an impermissible attack on the Commission's rules. 10 C.F.R. § 2.335(a).

The Commission's regulations permit onsite disposal of radioactive materials. 10 C.F.R. § 20.2001 *et seq*. In the LTR, the Commission established that onsite disposal of radioactive waste for sites with only short lived nuclides requires providing institutional controls for 100 years. Final Rule, 62 Fed. Reg. at 39,070. For sites with long lived nuclides, more stringent institutional controls will be required in order for onsite waste disposal to be authorized:

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at an adjoining property, with the exception of the non-radiological CERCLA/NRD-related restrictions that have already been imposed." DP § 16.5.4.

> In a limited number of cases, in particular those involving large quantities of uranium and thorium contamination, the presence of long-lived nuclides at decommissioned sites will continue the potential for radiation exposure beyond the 100-year period. More 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.

Id. Thus, the LTR unequivocally allows onsite storage of *both* short lived and long lived nuclides, the difference being only the nature and duration of the institutional controls required.[46]

Ignoring this clear regulatory position, Petitioner asserts in Contention 15 that "the intent of the decommissioning regulations is to limit the release of sites containing long-lived nuclides to unrestricted release." Petition at 79. This claim, which is unsupported by the excerpt from the LTR Final Rule cited by Petitioner,[47] directly contradicts what the Commission's regulations permit. Consequently, NJDEP Contention 15 impermissibly challenges the Commission's regulations and must be rejected. 10 C.F.R. § 2.335(a).[48]

O. Contention 16 (Legacy Sites)

Contention 16 reads:

The LTC license violates NRC policies by promoting the creation of legacy sites.

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[46] NRC guidance implementing the LTR allows onsite disposals if a dose criterion of 0-5 millirem per year is met. NUREG-1757, Vol. 1, Rev. 2, at 15-32.

[47] In support of this assertion, Petitioner quotes (at 79) the following statement in the Final Rule (62 Fed. Reg. at 39,069): "termination of a license for unrestricted use is preferable because it requires no additional precautions or limitations on use of the site after licensing control ceases, in particular for those sites with long-lived nuclides." However, the Commission immediately went on to recognize that "it may be more reasonable for the material to remain onsite" without terminating the license "because the net public or environmental damage through removal, transport, and disposal of materials could be larger than the benefit in dose reduction at the site." *Id.* For sites with long-lived nuclides seeking restricted use decommissioning, the Commission stated that it would allow such decommissioning but require "[m]ore stringent institutional controls" to limit potential exposures. *Id.* at 39,070. Hence, contrary to Petitioner's assertions, the Commission has expressly stated that it allows sites with long lived nuclides to obtain restricted use decommissioning.

[48] In support of Contention 15, Petitioner states that "NRC believes that NUREG-1757 complies with the LTR." Petition at 81. This statement clearly shows that Contention 15 is challenging the NRC rules, for NUREG-1757 provides guidance for the implementation of the LTC license sought in the DP.

Petition at 81. The target of this contention is actually not the DP, but the guidance in NUREG-1757, for in specifying how a genuine dispute exists between Petitioner and Licensee on a material issue of law, Petitioner states that "NRC believes that NUREG-1757 complies with the LTR. NRC Response to Comment 2.4.3 (Document # ML062370521)." Petition at 81. By Petitioner's own admission, the contention fails to meet the requirement in 10 C.F.R. § 2.309(f)(1)(vi) that there be a genuine dispute between it and *the applicant/licensee* on a material issue of law, and on that ground alone should be dismissed.

In addition, NJDEP has filed with the NRC a Petition for Rulemaking which "seek[s] to rescind" certain portions of NUREG-1757. Petition for Rulemaking on NUREG-1757, pursuant to 10 C.F.R. § 2.802(a) (Dec. 22, 2006). The Commission has since referred NJDEP's Petition for Rulemaking to the NRC Staff for processing. Order (Docket No. SMB-743) (January 12, 2007). Petitioner's own actions recognize that any alleged flaws in NUREG-1757 are appropriately handled by a petition for rulemaking and should not be adjudicated in this licensing proceeding. Indeed, "[i]t has long been agency policy that Licensing Board's "'should not accept in individual license proceedings contentions which are (or are about to become) the subject of general rulemaking by the Commission.'" *Duke Enery Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 345 (1999) (*quoting Douglas Point*, ALAB-218, 8 AEC at 85. For that reason, also, Contention 16 should be dismissed.

Contention 16 is also inadmissible because it is an impermissible attack on the Commission's rules. 10 C.F.R. § 2.335(a). In addition, the proposed contention fails to satisfy the requirements of 10 C.F.R. §§ 2.309(f)(1)(i), (ii), and (vi).

1. Contention 16 impermissibly challenges the NRC's rules.

Contention 16 is fatally flawed because the contention, along with the bases offered in support thereof, impermissibly challenge the NRC's rules. As noted above, the contention takes aim at alleged shortcomings of the guidance contained in NUREG-1757. However, Petitioner's challenges to NUREG-1757 are also direct challenges to the NRC's rules and, consequently, impermissible. 10 C.F.R. § 2.335(a).

For instance, Petitioner believes NUREG-1757 is inadequate because that guidance "will mak[e] it easier for facilities to permanently dispose of radioactive materials containing long-lived nuclides in a number of ways." Petition at 85. As previously discussed, the Commission's LTR specifically provides for the disposal of long-lived nuclides, so long as the Commission's requirements for stronger institutional controls are met:

> In a limited number of cases, in particular those involving large quantities of uranium and thorium contamination, the presence of long-lived nuclides at decommissioned sites will continue the potential for radiation exposure beyond the 100-year period. More 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.

Final Rule, 62 Fed. Reg. at 39,070.

The LTR permits restricted use decommissioning so long as (1) radiation levels are ALARA; (2) institutional controls are in place and will remain in effect to ensure that TEDE does not exceed 25 mrem per year; (3) the licensee has provided sufficient financial assurance to perform any control and maintenance responsibilities; and (4) should institutional controls no longer be in effect, TEDE would not exceed 100 mrem/year, or 500 mrem per year under certain circumstances. 10 C.F.R. § 20.1403. In accordance with these requirements, NUREG-1757 provides that

> [r]adioactive materials disposed onsite, in accordance with 10 CFR 20.2002, may be allowed to remain in place at license termination if the LTR radiological criteria are met for the entire site, including contributions from residual radioactivity in the onsite disposal.

NUREG-1757 (Vol. 1), Section 15.3.3 at 15-33. In sum, Petitioner's suggestion that it is inappropriate for NUREG-1757 to provide for the permanent disposal of long-lived nuclides is an attack on the NRC rules because the Commission's rules themselves provide for such disposal.

Similarly, Petitioner claims that it is inappropriate for NUREG-1757 to provide for 1000-year dose modeling for long-lived nuclides. Petition at 86. As previously discussed, the Commission's rules require a 1000-year TEDE calculation. 10 C.F.R. § 20.1401(d). In promulgating this rule, the Commission specifically rejected a request to conduct a dose assessment based on the specific nuclides present. 62 Fed. Reg. at 39,083. Thus, the guidance contained in NUREG-1757 implements what the NRC rules require.

Likewise, Petitioner claims that NUREG-1757 "underestimates the amount of financial assurance required by a licensee, thereby making permanent onsite disposal upon decommissioning under NUREG-1757 more attractive to licenses." Petition at 86. As previously discussed, onsite disposal of long-lived nuclides is permitted under the NRC's regulations.[49]

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[49] Petitioner also asserts that NUREG-1757 "fails to require adequate financial assurance because it ignores the effects of inflation." Petition at 87. Although not a direct challenge to the NRC rules, this assertion is incorrect. As explained in the response to Contention 8, NURE-1757 does consider inflation by requiring the licensee to assume a 1% annual real interest rate. Using a real interest rate means that the interest rate has been adjusted to remove the effects of inflation.

Petitioner's challenge to NUREG-1757 is simply a challenge to the NRC rules. A contention is inadmissible if its supporting bases challenge the NRC's rules, as is the case here. 10 C.F.R. § 2.335(a).

2. Contention 16 is impermissibly vague

The Petition fails to identify or specifically describe how approval of the DP would fail to "protect the public health," Petition at 82, or would pose a "hazard" to the "public." *Id.* at 85. Such non-specific challenges fail to give rise to a litigable issue. 10 C.F.R. § 2.309(f)(1)(i).

3. Contention 16 lacks a sufficient basis

Contention 16 lacks a sufficient basis because the arguments it advances amount to a claim that that a Long Term Control license contradicts NRC "policy" against the creation of legacy sites. The allegations assert no facts that would provide a basis for the contention. The Petition does not indicate in which respects or under what circumstances the waste present at the Newfield site would "pos[e] a hazard to the public" or cause "problems of contamination and transport of contamination." Petition at 85, 88. These allegations are on their face speculative and without factual basis, as demonstrated by further statements in the Petition, where Petitioner argues that "it is *reasonable to assume* that facilities disposing long-lived nuclides onsite under the LTR have a greater likelihood of releasing and transporting contamination. . . ." *Id.* at 89 (emphasis added). At bottom, Contention 16 contains an insufficient factual predicate to provide a minimum basis for the contention and is, therefore, inadmissible. 10 C.F.R. § 2.309(f)(1)(ii).

4. Contention 16 fails to controvert the DP

Contention 16 fails to controvert the DP and thus fails to show that a genuine dispute exists with the DP on a material law or fact. 10 C.F.R. § 2.309(f)(1)(vi). Nowhere does the contention point to a single instance where the DP has failed to comply with the NRC's

requirements. This alone is sufficient basis to reject Contention 16. *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-04-36, 60 NRC 631, 639-40 (2004) (affirming the Licensing Board's rejection of a contention that "fail[ed] to take issue with" the provisions of the application "by pointing out what portion is deficient"). Petitioner's failure to allege that a genuine dispute exists with the applicant on a material issue of law or fact renders this Contention inadmissible. 10 C.F.R. § 2.309(f)(1)(vi).

For all these reasons, Contention 16 should be rejected.

P. Contention 17 (Requirements for LTC License)

Petitioners proposed Contention 17 reads

> The NRC may not issue a LTC license until it promulgates rules and regulations to establish its terms and conditions.

Petition at 178.[50] The proposed contention fails to satisfy any of the requirements of 10 C.F.R. § 2.309(f)(1), and is therefore inadmissible.

Contention 17 fails to raise any alleged deficiency in the Shieldalloy DP for the Newfield site. The claims Petitioner advances in Contention 17 are not particular to the instant proceeding and are not cognizable herein.

Petitioner appears to be arguing that an LTC license may not be issued absent an express NRC rule authorizing it, and that in establishing such a license, the NRC is violating the AEA. *See* Petition at 180. Such an argument belongs in a rulemaking petition, not in a licensing proceeding. As noted in the response of Contention 16, that is precisely what Petitioner has done. By filing a rulemaking petition, Petitioner has removed its claim from consideration in this proceeding. *Oconee*, CLI-99-11, 49 NRC at 345.

[50] Contention 17 is submitted in Part III of the Petition as a "Miscellaneous Contention."

Contention 17 also advances a critique of the Staff's use of the guidance provided in NUREG-1757 as a way to implement the LTR. However, a contention that attacks the methods used by the Staff to insure compliance with the regulations is inadmissible. *Commonwealth Edison Co.* (Byron Nuclear Power Station, Units 1 and 2), LBP-80-30, 12 N.R.C. 683, 690 (1980), *reconsideration denied,* LBP-81-30A, 14 N.R.C. 364 (1981). This is because "[s]uch contentions are not appropriate for resolution in a particular licensing proceeding" particularly where, as is the case here, the contention "fail[s] to raise any issues specifically related to this [decommissioning plan] proceeding." *Id.*

Furthermore, the contention can not be redressed in this proceeding. Litigation of the contention would require a determination of whether the NRC Staff is required to conduct a rulemaking before it issues an LTC license. This determination the Atomic Safety and Licensing Board cannot make, because, as the Commission has "stated repeatedly over the last quarter-century, boards lack the authority to supervise the NRC Staff in the performance of its regulatory duties." *Dominion Nuclear Connecticut, Inc.* (Millstone Nuclear Power Station, Units 2 and 3), CLI-05-24, 62 NRC 551, 570 (2005), citing *Duke Energy Corp.* (Catawba Nuclear Station, Units 1 and 2), CLI-04-6, 59 NRC 62, 74 (2004) ("licensing boards do not sit to ... supervise or direct NRC Staff regulatory reviews"), citing *Calvert Cliffs*, CLI-98-25, 48 NRC at 349; *Curators of the University of Missouri,* CLI-95-1, 41 NRC 71, 121 (1995) ("As a general matter, the Commission's licensing boards and presiding officers have no authority to direct the Staff in the performance of its safety reviews"); *Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-80-12, 11 NRC 514, 516 (1980)).

Consequently, Contention 17 should be dismissed.

V. SELECTION OF HEARING PROCEDURES

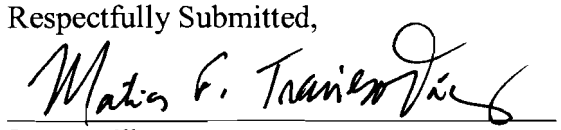
The Notice granted the opportunity to address the selection of hearing procedures in accordance with 10 C.F.R. § 2.309(g). 71 Fed. Reg. at 66,987. Pursuant to 10 C.F.R. § 2.309(g), a petitioner who relies on 10 C.F.R. § 2.310(d) – i.e., a petitioner seeking to have a proceeding conducted under the Subpart G procedures – has the burden of demonstrating "by reference to the contention and the bases provided and the specific procedures in subpart G of this part, that resolution of the contention necessitates resolution of material issues of fact which may be best determined through the use of the identified procedures."

Petitioner has neither addressed the selection of hearing procedures nor has met the burden of demonstrating that the procedures in Subpart G are appropriate. Moreover, none of the contentions would necessitate "resolution of issues of material fact relating to the occurrence of a past activity, where the credibility of an eyewitness may reasonably be expected to be at issue, and/or issues of motive or intent of the party or eyewitness material to the resolution of the contested matter." *See* 10 C.F.R. § 2.310(d). Accordingly, if any of Petitioner's contentions is admitted, the hearing on such contention should be governed entirely by the procedures of either Subparts L or N (assuming all parties agree to the applicability of the latter).

VI. CONCLUSION

For the reasons stated above, the Petition should be denied.

Respectfully Submitted,



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Dated: February 12, 2007

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of	)	
	)	
SHIELDALLOY METALLURGICAL CORPORATION	)	Docket No. SMB-743
	)	
	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "Shieldalloy's Answer to Petition for Hearing of State of New Jersey Department of Environmental Protection" dated February 12, 2007, were served on the persons listed below by deposit in the U.S. Mail, first class, postage prepaid, and where indicated by an asterisk by electronic mail, this 12th day of February, 2007.

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