

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of:	)	
	)	
	)	Docket No.: 40-9075-MLA
POWERTECH (USA), INC.	)	
	)	Date: April 12, 2010
	)	
(Dewey-Burdock In Situ Uranium Recovery	)	
Facility)	)	
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**APPLICANT POWERTECH (USA) URANIUM CORPORATION'S RESPONSE TO  
CONSOLIDATED PETITIONERS' REQUEST FOR A HEARING/PETITION  
FOR INTERVENTION**

**I. INTRODUCTION**

Pursuant to 10 C.F.R. § 2.309(h), Powertech (USA) Uranium Corporation (hereinafter "Powertech" or the "Applicant") hereby submits this response to a March 8, 2010, consolidated request for hearing/petition to intervene filed by Theodore P. Ebert, Susan Henderson, Liliac C. Jones Jarding, Gary Heckenlaible, David Frankel, Dayton Hyde, the Clean Water Alliance (CWA), and Aligning for Responsible Mining (ARM) (collectively the "Petitioners") (hereinafter the "Request") regarding Powertech's license application to construct and operate a proposed in situ leach uranium recovery (ISR) project in Custer and Johnson counties in the State of South Dakota (hereinafter the "Dewey Burdock ISR project"). For the reasons discussed below, Powertech respectfully submits that the Petitioners have failed to demonstrate that they have standing to intervene pursuant to 10 C.F.R. § 2.309(d). In the event that the Licensing Board determines that one or more Petitioners have standing, Powertech respectfully submits

that Petitioners have not proffered any admissible contentions pursuant to 10 C.F.R. § 2.309(f). Accordingly, Petitioners' Request should be denied.

## **II. BACKGROUND AND PROCEDURAL HISTORY**

On February 25, 2009, Powertech submitted a license application for an Atomic Energy Act of 1954, as amended (hereinafter the "AEA"), combined source and 11e.(2) byproduct material license to construct and operate its proposed Dewey-Burdock ISR project in South Dakota. After completing its ninety day acceptance review, the United States Nuclear Regulatory Commission (NRC) Staff determined that Powertech's Dewey-Burdock license application required additional data and information prior docketing for detailed technical and environmental review. As a result, on June 19, 2009, Powertech voluntarily withdrew its license application pending re-submission of the required additional data and information. On August 10, 2009, Powertech re-submitted its Dewey-Burdock license application with the additional data and information requested by NRC Staff. Powertech's resubmission of its license application provided additional data and information on some specific items such as breccias pipes, the Morrison Formation, deep-disposal well option, and existing wells in the proposed Dewey-Burdock ISR site area, but was not materially different from its initial license application submittal. After completion of a second ninety day acceptance review, NRC Staff determined that Powertech's Dewey-Burdock license application was acceptable for detailed technical and environmental review and was docketed.

After the Dewey-Burdock license application was made publicly available, on January 5, 2010, NRC Staff issued a Federal Register notice providing interested stakeholders and other members of the public with an opportunity to request a hearing on the application and to request access to sensitive unclassified non-safeguards information (SUNSI) associated with such

application.<sup>1</sup> On January 15, 2010, counsel for Petitioners submitted a request for access to SUNSI documentation. After reviewing this request, NRC Staff determined that Petitioners were not entitled to access to the SUNSI documentation. On February 26, 2010, Petitioners submitted a motion for a ninety (90) day extension of time to file their Request based on a number of factors including a lack of time to review the Dewey-Burdock license application. On March 3, 2010, both Powertech and NRC Staff filed responses in opposition to Petitioners' motion and, on March 5, 2010, the Commission determined that Petitioners were not entitled to an extension of time.

On March 8 and 9, 2010, Petitioners submitted their Request to the Commission. On March 12, 2010, the Commission established an Atomic Safety and Licensing Board Panel (Licensing Board) and referred Petitioners Request to the Panel. In response to Petitioners' Request, Powertech hereby submits this Response and respectfully requests that the Licensing Board determine that the Petitioners' have failed to demonstrate that they have standing to intervene pursuant to 10 C.F.R. § 2.309(d). In the event that it is determined that one or more Petitioners have standing, Powertech respectfully submits that no Petitioner has proffered any admissible contentions pursuant to 10 C.F.R. § 2.309(f)(1). Accordingly, Petitioners' Request should be denied.

### **III. STATEMENT OF LAW**

NRC regulations at 10 CFR Part 2 set forth the general parameters for parties seeking to intervene in a Commission proceeding on applications for materials licenses such as the combined source and 11e.(2) byproduct material license requested by Powertech. In order to be granted leave to intervene in this proceeding, a petitioner must demonstrate he or she has

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<sup>1</sup> See 75 Fed. Reg. 467 (January 5, 2010).

standing pursuant to 10 C.F.R. § 2.309(d) and has proffered at least one admissible contention pursuant to 10 C.F.R. § 2.309(f)(1). Each of these requirements will be addressed in turn below.

**A. Standing Requirements**

An interested party or other member of the public who requests a hearing or seeks to intervene in a Commission proceeding must demonstrate that he or she has standing to intervene.

See 10 C.F.R. § 2.309(d). Pursuant to this requirement, the Commission has set forth the following items that a request for a hearing or petition to intervene must contain:

- (i) The name, address and telephone number of the petitioner;
- (ii) The nature of the requestor's/petitioner's right under the [Atomic Energy] Act to be made a party to the proceeding;
- (iii) The nature and extent of the requestor's/petitioner's property, financial or other interest in the proceeding; and
- (iv) The possible effect of any decision or order that may be issued in the proceeding on the requestor's/petitioner's interest.

10 C.F.R. § 2.309(d)(1).

Standing is not a mere legal technicality. It is, in fact, an essential element in determining whether there is any legitimate role for a court or an agency adjudicatory body in dealing with a particular grievance. *Westinghouse Electric Corporation*, (Nuclear Fuel Export License for Czech Republic, Temelin Nuclear Power Plants), CLI-94-7, 39 NRC 322, 331-332 (June 9, 1994). The Commission applies traditional judicial concepts of standing to requests for hearing or petitions for leave to intervene and has stated that these concepts should be applied by adjudicatory boards in determining whether a petitioner is entitled to intervene as a matter of right. See e.g., *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-98-21, 48 NRC 185, 195 (1998); *Portland General Electric Co.*, (Pebble Springs Nuclear Plant, Units 1 and 2), ALAB-333, 3 NRC 804 (June 22, 1976); see also *Niagra Mohawk Power Corp.*, (Nine Mile Point Nuclear Station, Unit 2), 18 NRC 213, 215 (1983) (noting that contemporaneous judicial

concepts should be used to determine whether petitioner has standing to intervene). Thus, the propriety of intervention involves both “constitutional limitations” on an adjudicatory body’s jurisdiction and “prudential limitations” on its exercise. *Coalition of Arizona/New Mexico Counties for Stable Economic Growth v. Department of Interior*, 1997 U.S. Dist. LEXIS 4212, \*6 (10<sup>th</sup> Cir. 1997), citing *Warth v. Seldin*, 422 U.S. 490, 498 (1975).

The “irreducible constitutional minimum” standing test requires a potential litigant to demonstrate that: 1) the litigant has suffered actual or threatened injury, 2) that is caused by, or fairly traceable to, an act that the litigant challenges in the instant litigation, and 3) that is likely to be redressed by a favorable decision.” See e.g., *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992); *Yankee Atomic Elec. Co.* (Yankee Nuclear Power Station), CLI-96-1, 43 NRC 1, 6 (1996); *Georgia Institute of Technology*, 42 NRC 111, 115 (1995); *Envirocare of Utah, Inc.*, 35 NRC 167, 174-5 (1992). These three elements are commonly referred to as injury-in-fact, causation, and redressability.

Beyond the constitutional standing test set forth above, “prudential limitations” are also imposed on a potential intervenor’s prospective standing. Prudential considerations include a party’s not being permitted to assert a generalized grievance and a party’s not being permitted to assert the rights of third parties. See *Warth*, 422 U.S. at 499. Specifically, prudential standing requirements require a showing that the injury is arguably within the “zone of interests” protected by statutes governing the proceeding. *Assoc. of Data Processing Serv. Orgs., Inc. v. Camp*, 397 U.S. 150 (1970); *Metropolitan Edison Co.*, 18 NRC 327, 332 (1983); *Gulf States Utilities Co.*, 40 NRC 43, 47 (1994).

With regard to injury in fact, which may be either actual or threatened, it must be both *concrete* and *particularized*, not *conjectural* or *hypothetical*. As a result, standing should be

denied when the threat of injury is too speculative. *See Sequoyah Fuels Corp. and General Atomics*, 40 NRC 64, 72 (1994). To show the required injury-in-fact based on an assertion of future harm, NRC has held that future harm “must be threatened, certainly impending, and real and immediate.” *Babcock & Wilcox*, 1993 NRC LEXIS 6, \*7-8 (1993).

Petitioners also must establish a causal nexus between the alleged injury and the action subject to challenge in the proceeding. *Commonwealth Edison Co. (Zion Nuclear Power Station, Units 1 & 2)*, LBP-98-27, 48 NRC 271, 276 (1998), *aff’d*, CLI-99-4, 49 NRC 185 (1999).

Determination of a “causal nexus” under this standard depends, in part, on whether the chain of causation is “plausible.” *Sequoyah Fuels*, CLI-94-12, 40 NRC at 75. Judicial and Commission standing jurisprudence requires “realistic threat...of direct injury.” *Int’l Uranium (USA) Corp. (White Mesa Uranium Mill)*, CLI-01-21, 54 NRC 247, 254 (2001). Absent an obvious potential for harm, “it becomes [petitioner’s] burden to provide a ‘specific and plausible’ explanation of how the action will affect her.” *See Nuclear Fuel Servs., Inc. (Erwin, Tennessee)*, CLI-04-13, 59 NRC 244, 248 (2004) (finding no obvious potential for harm at petitioner’s property 20 miles from the site of a facility that converted high-enriched uranium to low-enriched uranium).

In Commission proceedings involving materials licenses such as the instant case, there is no automatic presumption of standing based on geographic proximity to the proposed licensed site. Currently, the Commission applies a standard to such presumptions of standing “where there is a determination that the proposed action involves a significant source of radioactivity producing an obvious potential for offsite consequences.” *Georgia Tech*, CLI-95-12, 42 NRC at 116, *citing Sequoyah Fuels*, CLI-94-12, 40 NRC at 75, n.22. A presumption of standing based on proximity to a proposed licensed site and the distance at which such a presumption would apply is determined “on a case-by-case basis, taking into account the nature of the proposed

action and the significant of the radioactive source.” *Id.* This geographic location at which such a presumption will be defined “depends on the danger posed by the source at issue.” *Sequoyah Fuels*, CLI-94-12, 40 NRC at 75, n.22.

An organization can establish standing by demonstrating injury to itself as an entity or injury to its members. *Coalition of Arizona/New Mexico Counties for Stable Economic Growth*, 1997 U.S. Dist. at \*8-9; *see also Georgia Tech*, CLI-95-12, 42 NRC at 115. In order to establish organizational standing, an organization must allege: (1) that the action will cause an injury-in-fact to either (a) the organization’s interest or (b) the interests of its members; and (2) that the injury is within the zone of interests of the statute at issue. *Yankee Atomic Electric Co.*, (Yankee Nuclear Power Station) 39 NRC 95, 102 n. 2 (March 18, 1994). A showing of “representational standing” by an organization “[m]ust demonstrate how at least one member may be affected by the licensing action, must identify that member by name/address, and must show that the organization is authorized to request a hearing on that member’s behalf.” *N. States Power Co.* (Monticello; Prairie Island, Units 1 & 2; Prairie Island ISFSI), CLI-00-14, 52 NRC 37, 47 (2000). If injury to a member is the basis for an assertion of standing, it must be remembered that the mere interest in a problem without a showing that a member will be affected directly is insufficient to give an organization standing. *Allied General Nuclear Services*, (Barnwell Fuel Receiving and Storage Station), 3 NRC 420 (April 28, 1976).

**B. Admissibility of Contentions**

In addition to satisfying the Commission’s requirement for standing pursuant to 10 C.F.R. § 2.309(d), a petitioner must proffer at least one admissible contention pursuant to 10 C.F.R. § 2.309(f)(1). Currently, Part 2.309(f)(1) mandates that a petitioner must satisfy the following requirements:

“A request for hearing or petition for leave to intervene must set forth with particularity the contentions sought to be raised. For each contention, the request or petition 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 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).

The application of these six contention admissibility factors is “strict by design.” *Dominion Nuclear Conn., Inc.*, (Millstone Nuclear Power Station, Units 2 & 3), CLI-01-24, 54 NRC 349, 358 (2001). The failure to satisfy each of the six contention admissibility factors results in grounds for dismissal of a particular contention. *Private Fuel Storage LLC* (Independent Fuel Storage Installation), CLI-99-10, 49 NRC 318, 325 (1999). In other words, as stated by the Commission, “[i]f any one of these requirements is not met, a contention must be rejected.” *Arizona Public Service Co.* (Palo Verde Nuclear Generating Station, Units 1, 2, and 3), CLI-91-12, 34 NRC 149, 155 (1991).

The Commission's standards for admissible contentions do not permit the filing of "'a vague, unparticularized contention,' unsupported by affidavit, expert, or documentary support." *N. Atl. Energy Serv. Corp.* (Seabrook Station, Unit 1), CLI-99-6, 49 NRC 201, 219 (1999), quoting *Balt. Gas & Elec. Co.* (Calvert Cliffs Nuclear Power Plant), CLI-98-25, 48 NRC 325, 349 (1998). 10 C.F.R. § 2.309(f)(1)(i) states that a petitioner must submit proposed contentions that provide a "specific statement of the issue of law or fact to be raised or controverted." 10 C.F.R. § 2.309(f)(1)(i). Admissible contentions must state "with specificity" safety or legal reasons for why the application in question must be rejected. *Millstone* CLI-01-24, 54 NRC at 359-60. Thus, in the case where a petitioner offers nothing more than "generalized suspicions, hoping to substantiate them later," such proposed contentions should be rejected. *Duke Energy Corp.* (McGuire Nuclear Station Units 1 & 2; Catawba Nuclear Station, Units 1 & 2), CLI-03-17, 58 NRC 419, 424 (2003) quoting *Oconee*, CLI-99-11, 49 NRC at 337-339.

As stated in 10 C.F.R. § 2.309(f)(1)(iii), admissible contentions must be within the scope of the proceeding as defined by the Federal Register notice offering an opportunity for a hearing. *See Florida Power and Light Co.* (Turkey Point Nuclear Generating Plant, Units 3 & 4), CLI-00-23, 52 NRC 327, 329 (2000). Pursuant to 10 C.F.R. § 2.309(f)(1)(vi), an admissible contention must present a genuine dispute with the applicant on a material issue of law or fact, and any contention failing to satisfy this requirement can be dismissed. *See Sacramento Mun. Util. Dist.* (Rancho Seco Nuclear Generating Station), LBP-93-23, 38 NRC 200, 247-248 (1993), *review declined*, CLI-94-2, 39 NRC 91 (1994). Failure to support a contention with adequate factual information and expert opinions requires that the contention be rejected. *See Palo Verde*, 34 NRC at 155.

10 C.F.R. § 2.309(f)(1)(vi) states that a petitioner is required to “provide sufficient information to show...a genuine dispute...with the applicant...on a material issue of law or fact.” 10 C.F.R. § 2.309(f)(1)(vi) (2010). It is a petitioner’s responsibility to specifically state how a license application is inadequate and to “explain why the application is deficient.” *See* United States Nuclear Regulatory Commission, Final Rule, Rules of Practice for Domestic Licensing Proceedings—Procedural Changes in the Hearing Process, 54 Fed. Reg. 33168, 33,170 (August 11, 1989); *see also Palo Verde*, CLI-91-12, 34 NRC at 156

Mere speculation and bare assertions alleging that a matter should be considered will not suffice to allow the admission of a proffered contention. *See Fansteel, Inc.*(Muskogee, Oklahoma Site), CLI-03-13, 58 NRC 195, 203 (2003). The Licensing Board is not required to make assumptions of fact that favor Petitioners when they fail to provide the required support for their contentions. *See Georgia Tech*, (Georgia Tech Research Reactor), LBP-95-6, 41 NRC 281, 305 April 26, 1995). In addition, information offered by Petitioners to support a contention requires an explanation of its significance in order to be sufficient to admit such contention. *Fansteel*, CLI-03-13, 58 NRC at 204.

With respect to the scope of this proceeding as defined in the January 5, 2010 Federal Register notice and notice of opportunity for a hearing, it is limited to Powertech’s proposal to construct, operate, restore, and decommission an ISR project site at the proposed Dewey-Burdock site and to recover uranium from wellfields located at that site. *See* 75 Fed. Reg. 467. Thus, admissible contentions must be strictly limited to issues that are relevant to Powertech’s proposal. *See Yankee Atomic Elec. Co.*, CLI-98-21, 48 NRC at 204, and any contention falling outside the scope of this proceeding should be rejected. *See Portland Gen. Elec. Co.* (Trojan Nuclear Plant), ALAB-534, 9 NRC 287, 289-290, n.6 (1979).

C. **Statutory and Regulatory Pre-Conditions for ISR Uranium Recovery Pursuant to an NRC License**

1. **The ISR Process**

As a general proposition, the existence of natural geologic, hydrologic, and geochemical conditions in aquifers amenable to the ISR process, the ISR process itself, and regulatory requirements for ISR operations and restoration taken together provide a significant package of mitigation measures to prevent potential short and long-term impacts to adjacent, non-exempt underground sources of drinking water (USDWs). There are several naturally occurring geologic, hydrologic, and geochemical conditions that, in and of themselves, contribute significantly to the isolation of uranium and its associated heavy metals in a redistributed ore body from other portions of an aquifer that can potentially serve as a USDW and that can serve to complement and enhance the benefits of existing NRC regulatory control requirements for operations and groundwater restoration.

ISR operations were first tried on an experimental basis in the early 1960s with the first commercial facility commencing operations in 1974. ISR processes continuously re-circulate through the ore body native groundwater from the aquifer in which the ore body resides after fortifying it with oxygen and/or carbon dioxide. Uranium deposits amenable to ISR processes occur in permeable sand or sandstones that typically are confined above and below by less permeable strata. Confinement is a natural environmental condition that acts to assist in the creation of isolated deposits of minerals (e.g., uranium) as a natural result of groundwater flow forced by less permeable layers above and below through coarser sands into reducing environments. These deposits can either be tabular or C-shaped deposits formed as “roll-fronts.” These uranium-bearing formations were formed by the lateral movement “downdip” of groundwater bearing minute amounts of oxidized uranium in solution through the aquifer until

precipitation of the uranium occurs along the boundary where the oxygenated waters encounter a zone of abundant reductant. Currently, the uranium roll front deposition that has taken place over millions of years is *ongoing on a regional basis every day*. Regional roll fronts require broad areas of upgradient oxidation to keep uranium mobile until the oxygenated water moves downgradient and encounter a zone with sufficient reductant. It is at this regional *redox interface* where the oxygenated water is reduced and uranium is deposited in a reduced mineral phase in what is known as a *redistributed* ore body that ISR operations are conducted.

Uranium mineralization leaves a distinct radiochemical footprint or signature in the host rock and surrounding groundwater—that is, uranium occurs not only upon the rock matrices, but also in the groundwater within the ore body. In other words, given natural dissolution processes, uranium and uranium progeny that accumulate on the host sands also occur naturally in surrounding groundwater media. For a uranium ore body to be amenable to ISR processes using industry standard recovery chemistry, the ore zone must be saturated with relatively fresh water and the rock must have enough transmissivity for water to flow from injection to extraction wells. In other words, for the ISR process to work, the ore must be situated in a saturated, water-bearing interval referred to as an aquifer. *There are no ISR uranium recovery operations in ore bodies that are not in aquifers.*

Techniques for ISR operations, including well construction techniques, regular well testing techniques (i.e., mechanical integrity testing (MIT)), upper control limits (UCL) for highly mobile constituents to provide “early warning” of potential excursions, extensive monitor well systems, and well field balance and “bleed,” have evolved to the point where these techniques complement and enhance the above-noted naturally occurring conditions to provide

ongoing, iterative mitigation measures with the flexibility to adjust to site-specific conditions in order to protect adjacent USDWs.

After an ore body that is amenable to ISR processes is identified, the licensee develops well-field designs to progressively remove uranium from the identified ore body. Well-field design is based on grids with alternating extraction and injection wells, monitor wells above and below the recovery zone, and a ring of monitoring wells surrounding the entire recovery zone to detect any potential *excursions* of solubilized uranium and other minerals from the uranium recovery production zone. Each well field is operated at the maximum continuous flow-rate achievable for that particular well field pattern area. Injection and extraction/production flow-rates are monitored and adjusted as necessary on a daily basis, so that injection can be balanced with extraction/production across the entire well field, with the injection flow smaller than the extraction flow by the amount of the “bleed” rate. The process “bleed” rate varies according to ore body geometry, well pattern and magnitude, and direction of the natural groundwater velocity. Proper well field balance, including the process “bleed,” maximizes recovery while protecting against recovery solution excursions.

The *sequential* development of ISR well fields is an example of the iterative, “phased” nature of ISR projects. The development of these well-fields and the accumulation of a complete sampling database cannot take place until a project operator installs baseline, production, and monitor wells. Engineers and geologists continually assess data as it is obtained, applying this new information to the next phase or activity, thus ensuring that subsequent exploration and delineation is based on the most up-to-date information possible to ensure proper well placement. Prior to installing monitor wells, additional exploration and delineation has to be conducted to assure the wells are properly placed. As well-fields are developed, all wells, including monitor

wells, are pump tested to assure that they function appropriately prior to being sampled. Water quality sampling establishes water quality within and outside the ore zone (i.e., at the monitor wells) and the aforementioned UCLs to enable the licensee to readily determine if an excursion has occurred. A “lessons learned” approach is implemented, as the results in one well-field may cause the site engineer or geologist to change design in the next. This process is both progressive and iterative, as each well-field is developed and tested with the mineral being progressively depleted from different parts of the ore body.

During active operations, native groundwater from the recovery zone in the aquifer is pumped to the surface for fortification with oxygen and carbon dioxide. This fortified water, which is similar to soda water (i.e., not water fortified with toxic chemicals), is then returned to the recovery zone through a series of *injection* wells in varying patterns in the well-fields. Water withdrawn from *extraction wells* in these patterns exceeds the water injected into the patterns creating a “cone of depression” that assures a net inflow of water into the recovery zone of the aquifer. This is to ensure no lateral or vertical water movement from the small portion of the aquifer where uranium recovery operations will occur, so that any adjacent, non-exempt USDWs will not be impacted by excursions of recovery solutions. The process also continually flushes fresh water into the recovery zone helping to inhibit the build-up of contaminants that could reduce the efficiency of recovery operations.

The extraction pumping causes the injected lixiviant to move through the uranium ore body oxidizing and solubilizing the uranium present in the host sandstone. The water from the extraction wells is then run through ion-exchange (IX) columns containing synthetic resins, which remove the uranium in a process essentially identical to that used to remove minerals from “hard” drinking water in a conventional home water softener. The uranium is then stripped from

the IX resins using a brine solution (again similar to the backwash that takes place in a home water softener). The uranium in this rich eluate is then precipitated chemically, dewatered, and dried to produce saleable *yellowcake*.

After uranium removal in the IX column, the water in the circuit is re-fortified and re-injected as part of a continuous process until the uranium in the ore zone is exhausted. Since water from the ore body, already containing naturally occurring uranium and its progeny, is continuously refortified with oxygen and re-circulated through the sandstone to enhance uranium values removed in the IX columns, injection is balanced with extraction (i.e., extraction slightly exceeds injection to maintain an inward hydraulic gradient). Injection cannot proceed without an equal or greater amount of extraction; therefore, over-injection across the area cannot take place. To help keep the continuously operating system in balance, the extra water that is extracted is removed from the circuit as a “bleed.” The “bleed,” which contains elevated levels of radium, can be treated to remove the radium in settlement ponds using a barium-radium sulphate precipitation method. Ultimately, the treated water is discharged to holding ponds or tanks and from there it must be disposed of using deep well injection, solar evaporation, land application or some combination of these methods.

After active ISR operations cease, the groundwater in the recovery zone is restored *consistent with baseline* or other water quality criteria that are approved by NRC prior to the commencement of active production operations. The natural reductive and confining conditions noted above and NRC’s requirement that an ISR operator engage in active groundwater restoration in the recovery zone together serve as the primary bases for mitigation of any potential long-term impacts to adjacent, non-exempt USDWs. Restoration efforts are designed to flush recovery solutions from the recovery zone to enhance its natural pre-operational

reductant properties. Logic dictates that these reductant properties which created the redistributed ore body in the first place will be more than adequate to retard movement of mobilized constituents (particularly heavy metals such as uranium) over the long-term.

Upon completion of groundwater restoration, wells are sealed or capped below the soil surface using approved plugging methods and the soil surface is restored. Surface process facilities are decontaminated, if necessary, and removed, and any necessary reclamation and re-vegetation of surface soils is completed. As a result, after site closure is completed and approved, there is no visual evidence of an ISR site, and the decommissioned site will be available for unrestricted (i.e., any future) use.

Liquid waste also is generated during groundwater restoration when uranium recovery operations have ceased. Groundwater sweep uses existing production well field patterns to flush the recovery zone with natural groundwater from outside of the recovery zone and to extract the flushed water from the ore zone for treatment on the surface. Removed groundwater can be treated using reverse osmosis (RO) to create *de-ionized* water which can be re-injected to accelerate groundwater restoration. In fact, more recent groundwater restoration efforts have often used a combination of these two techniques and, possibly, the injection of a reductant and pH modifier to optimize restoration results. Groundwater restoration returns water within the depleted recovery zone to approved levels determined by NRC to be adequate to minimize or eliminate post-restoration migration of contaminants and any potentially significant, adverse impacts to adjacent, non-exempt USDWs.

In over three decades of operations, there have been *no significant, adverse impacts to adjacent, non-exempt USDWs* outside the recovery zone and into the related area of review

(AOR)<sup>2</sup> from ISR operations in the United States.<sup>3</sup> Well-field balancing, use of the “bleed,” and extensive ongoing monitoring and frequent MITs at ISR sites have been highly successful in assuring that leach solution is contained within the ore (recovery) zone and to mitigate the impacts of any excursions. Before monitoring ceases, restoration is completed to minimize or eliminate the potential risk of excursion that could result in the migration of contaminants from the exempted recovery zone portion of the aquifer to adjacent, non-exempt portions of the aquifer.

ISR projects can be operated in one of two facility types. First, an ISR project can be operated using a central processing facility and well-fields that are directly adjacent to the processing facility. This allows the operator to license a defined site footprint and to construct adjacent well-fields from which pregnant lixiviant may be directly pumped to the central processing facility. This recovery approach is best utilized when the identified and defined uranium ore body contains enough uranium to make the licensing, construction, and operation of an individual central processing facility economically viable.

In instances where uranium ore bodies do not contain enough uranium to justify the licensing, construction and operation of central processing facilities, ISR operators may use satellite or so-called “remote IX” technology to develop well-fields that can be at considerable distances from a central processing facility. The use of “remote IX” has been utilized to recover

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<sup>2</sup> The “area of review” is essentially a “buffer zone” prescribed by the United States Environmental Protection Agency’s (EPA) underground injection control (UIC) program to provide additional protection for USDWs during ISR uranium recovery. 40 CFR § 146.6 requires that all ISR uranium recovery licensees must establish a fixed radius of not less than ¼ mile for the area surrounding the recovery zone. The regulation also states:

“In determining the fixed radius, the following factors shall be taken into consideration: Chemistry of injected and formation fluids; hydrogeology; population and ground-water use and dependence; and historical practices in the area.”

40 CFR § 146.6.

<sup>3</sup> See United States Nuclear Regulatory Commission, *Staff Assessment of Groundwater Impacts from Previously Licensed In-Situ Uranium Recovery Facilities*, (July 10, 2009)

uranium in South Texas as early as 1980 and is currently used by various ISR companies in Wyoming and Texas. Each “remote IX” is a self-contained, stand-alone unit that recovers uranium using IX columns and resins. When the IX resins are fully loaded with uranium, they are pumped into transport conveyances, typically tanker trucks. After the uranium-bearing resins are pumped into the transportation conveyance, the resins are transported to a central processing facility where the resins will undergo the same processes described above. The use of remote IX technology has become increasingly popular given that many uranium deposits (e.g., deposits with 2-3 million pounds) cannot justify the cost of licensing and constructing a commercial-scale central processing facility and, recently, there have been some indications that ISR processes using each individual well-field’s water results in more production efficiency.

## **2. EPA’s Safe Drinking Water Act Underground Injection Control Program**

To assure safe and effective underground injection throughout the United States, in 1974, the United States Congress enacted the Safe Drinking Water Act (SDWA),<sup>4</sup> which, in part, authorized establishment of the UIC program so that injection wells would not endanger current and future USDWs. The SDWA empowered the EPA with the primary authority to regulate underground injection to protect current and future sources of drinking water. EPA also was authorized to provide States with the opportunity to assume primary authority over UIC programs in accordance with final regulations promulgated by EPA in 1980, which set minimum standards for State programs to meet to be delegated primary enforcement responsibility (i.e., *primacy*) over such programs.<sup>5</sup> UIC regulations establish specific performance criteria for each well class (ISR injection and production wells generally are Class III wells) to assure that

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<sup>4</sup> While NRC does not have jurisdiction over matters covered by EPA’s mandate under the SDWA and its UIC program, it is important for the License Board to understand the comprehensive, and often redundant, regulatory program for ISR operations.

<sup>5</sup> See 42 U.S.C. § 300h(1) (2005).

drinking water sources, actual and potential, are not rendered unfit for such use by underground injection of the fluids common to that particular class of wells.

Between 1981 and 1996, EPA granted primacy to 34 States for all injection wells (except those on Tribal lands). EPA implements the UIC program directly in 10 States and shares responsibility in six (6) other States. The State of South Dakota does not have *primacy* for the UIC program, so EPA directly implements UIC programs for all classes of wells for a proposed ISR project in South Dakota. Unless authorized by rule or by permit, any underground injection is unlawful and is in violation of the SDWA and UIC regulations.

Before NRC-licensed ISR operations can commence at any proposed ISR site, an ISR operator must have obtained two authorizations: (1) an aquifer exemption for the aquifer or portion of the aquifer wherein ISR mining operations will occur and (2) a UIC permit. Underground injection is broadly defined as the technology of placing fluids underground in porous formations of rocks through wells or other similar conveyance systems. Thus, all ISR uranium recovery injection well activities require these relevant authorizations.

#### **a. Aquifer Exemptions**

As noted above, the UIC program was created to protect current or future USDWs. A USDW is defined as an aquifer, or portion thereof, which serves as a source of drinking water for human consumption, or contains a sufficient quantity of water to supply a public water system, and contains fewer than 10,000 mg/liter of total dissolved solids (TDS). The broad definition of a USDW was mandated by Congress in Section 1421(d)(2)<sup>6</sup> of the SDWA to ensure that future USDWs would be protected, even where those aquifers were not currently being utilized as a drinking water source or could not be used without some form of water treatment.

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<sup>6</sup> See 42 U.S.C. § 300h(b)(1) (2005).

Within this regulatory framework, however, some aquifers or portions of aquifers, which can meet the broad regulatory definition of a USDW, cannot reasonably be expected to serve as a current or future source of drinking water. As a result, the UIC program regulations allow EPA to *exempt* portions of an aquifer from delineation as a USDW and allow for injection into such aquifers or portions thereof. EPA regulations at 40 CFR § 144.8 specifically state:

“An aquifer or a portion thereof which meets the criteria for an ‘underground source of drinking water’ in § 146.3 may be determined under 40 CFR § 144.8 to be an ‘*exempted aquifer*’ if it meets the following criteria:

- a. It does not currently serve as a source of drinking water; and
- b. It cannot now and will not in the future serve as a source of drinking water...or
- c. The total dissolved solids content of the ground water are more than 3,000 and less than 10,000 mg/L and it is not reasonably expected to supply a public water system.”<sup>7</sup>

According to EPA, aquifers meeting these criteria are generally associated with *in situ* mineral recovery and enhanced oil recovery. If an operator, licensee or permittee wishes to inject into a USDW for the purpose of recovering minerals (e.g., uranium), a demonstration must be made that the proposed aquifer meets at least one of the exemption criteria. EPA has issued guidance on the standards that must be satisfied to qualify for an aquifer exemption. To the best of Powertech’s knowledge, there is no provision in the SDWA authorizing revocation of an aquifer exemption granted pursuant to 40 CFR § 144.8, nor has EPA promulgated regulations establishing criteria for revocation of an aquifer exemption nor has it ever actually revoked such an exemption.

In addition, EPA’s SDWA UIC regulations do not require post-operation groundwater restoration standards for exempted aquifers, because such exempted aquifers will not be used as drinking water source at any time after ISR operations are complete. However, as described in

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<sup>7</sup> See 40 CFR § 144.8 (2005) (emphasis added).

40 CFR § 146.7, EPA's UIC regulations do require corrective action/remediation for any contamination of adjacent, non-exempt aquifers in accordance with the purpose of the SDWA and the UIC program which is to protect USDWs.

**b. Underground Injection Control Permits**

To obtain a UIC permit for a new Class III well, the owner/operator or licensee must file an application with the UIC Director for the relevant jurisdiction containing specific information listed in 40 CFR Part 146 or in applicable State requirements. Once a UIC permit application has been reviewed, the applicant will be notified of the items needed to complete the application, if any. After a complete application is received, an initial decision to grant or deny the permit is issued. UIC regulations also provide opportunities for public participation and comment.

A UIC permit for each site is a necessary prerequisite for the operation of any ISR uranium recovery project. Such a permit necessarily assumes that the aquifer or portion thereof to be used for underground injection *cannot now or in the future be used as a USDW*. Without this fundamental assumption being reflected in an aquifer exemption, a UIC permit for ISR uranium mining will not be issued.

Pursuant to its NRC license, Powertech will be required to restore ISR recovery zone groundwater (exempted aquifer groundwater) consistent with *pre-operational or baseline water quality* or a maximum contaminant level (MCL) prescribed for given constituents under the SDWA, *whichever is higher*, or an alternate concentration limit (ACL), as articulated in 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5). These restoration standards are not intended to create a new drinking water source within the designated recovery zone; but rather, it is intended to minimize or eliminate the potential for post-restoration migration of recovery solutions from the exempted aquifer to adjacent, non-exempt aquifers, or portions thereof.

Thus, EPA's UIC program specifically recognizes that many aquifers or portions thereof cannot now or ever in the future serve as viable USDWs. In many cases, the contamination in such water sources is created by the presence of high concentrations of minerals (e.g., uranium) that may be recovered using underground injection methods. As such, the UIC program provides for aquifer exemptions, *which must be obtained prior to the commencement of underground injection* for the purposes of ISR operations.

#### **IV. ARGUMENT**

##### **A. Petitioners Have Failed to Demonstrate Standing to Intervene**

After reviewing Petitioners' Request and each supporting affidavit, Powertech respectfully requests that the Licensing Board find that Petitioners have failed to satisfy the Commission's requirements for standing under 10 C.F.R. § 2.309(d). Accordingly, Petitioners' Request should be denied.

Prior to addressing Petitioners' individual affidavits, a critical element of the Licensing Board's inquiry into whether any or all of the Petitioners have the requisite standing to intervene in this proceeding is whether there is a plausible mechanism or pathway through which contaminants from the proposed Dewey-Burdock ISR site potentially could reach areas where Petitioners could suffer some concrete, particularized injury-in-fact. For example, the Commission in *International Uranium Corp.*, a petitioner attempted to demonstrate standing by providing an expert affidavit regarding undetected potential leakage from the site's conventional uranium mill tailings impoundments. *See* CLI-01-21, 54 NRC at 254. This petitioner's supporting affidavit provided allegations of such potential undetected leakage and claimed that such leakage would contain contaminants that would cause him to suffer injury-in-fact. However, the expert affidavit failed to demonstrate any plausible mechanism or pathway by

which such contaminants would travel and emerge at a location where the petitioner would be exposed and suffer such injury-in-fact. As a result, the Commission determined that the allegation constituted nothing more than mere “unfounded conjecture.” *See id.* This determination is supported by the aforementioned *Nuclear Fuel Services, Inc.* case where the Commission stated that, absent an obvious potential for harm, “it becomes [petitioner’s] burden to provide a ‘specific and plausible’ explanation of how the action will affect her.” *See* 59 NRC at 248. Thus, based on this decision, any allegations made by Petitioners regarding potential exposure to contaminants in groundwater from the proposed Dewey-Burdock ISR site will have to allege a plausible mechanism or pathway by which contaminants can migrate and reach a location where Petitioners can be exposed and potentially suffer injury-in-fact.

With this said, Powertech will address each of Petitioners’ individual affidavits and respectfully requests that the Licensing Board find that none of the Petitioners have demonstrated standing in accordance with 10 CFR § 2.309(d):

**1. Affidavit of Theodore P. Ebert**

The first affidavit submitted by Petitioners in support of their Request is the affidavit of Theodore P. Ebert. Mr. Ebert’s affidavit includes several generalized assertions regarding his personal uses of water, the aquifer from which he believes his water is drawn, the fact that water in the city of Edgmont allegedly has “worsened” since he arrived in the area, and general concerns for his family. *See* Ebert Affidavit at 1-2. Mr. Ebert also states his opinion that the ISR process or any other mining technique is unsafe. *See id.* at 2. None of these statements are sufficient to provide Mr. Ebert with standing to intervene in this proceeding.

Mr. Ebert’s affidavit is rife with generalized and unparticularized statements that fail to satisfy the Commission’s standard for standing of a “concrete and particularized” injury. For

example, Mr. Ebert's affidavit, Section 3 states that "I use water for personal, household, domestic purposes, [including gardening, irrigation, bathing, drinking]. To my knowledge, my water comes from the Ogalala [sic] aquifer." *Id.* at 1. This statement offers nothing more than generalized statements about types of water use and where his water *may* be drawn at his home; but, Mr. Ebert makes no attempt to identify the nature of source of any potential contaminants, nor does he offer a plausible mechanism or pathway for any such contaminants to migrate to his property or water source. Similarly, Mr. Ebert alleges that there is no evidence of cattle grazing along "the stretch of road between Edgmont and Dewey SD" because water in the area is not safe. *Id.* This statement also does not allege any particular injury to himself or any of his interests that would result in standing to intervene, as the allegation does not even allege an injury that could be seen as injury-in-fact. Thus, since standing can only be shown by alleging an actual or threatened injury-in-fact, Mr. Ebert's statements referenced above are insufficient to show standing. *See Yankee Atomic Elec. Co.*, 48 NRC at 195.

Further, Mr. Ebert states that he has an interest in "clean water and a cleaner environment [sic]" and in the fact that uranium mining techniques are not safe. This statement falls short of the requirement for standing, as a generalized interest in a "cleaner environment" or in preventing uranium mining is insufficient to show standing. *See International Uranium (USA) Corp.* (White Mesa Uranium Mill), LBP-02-3, 55 NRC 35, 39 (2002), *citing Sierra Club v. Morton*, 405 U.S. 727, 734-735 (1972). Therefore, Mr. Ebert's affidavit has failed to demonstrate standing in accordance with 10 CFR § 2.309(d).

## 2. Affidavit of Gary Heckenlaible

The second affidavit submitted by Petitioners in support of their Request is the affidavit of Gary Heckenlaible. Similar to Mr. Ebert's affidavit, Mr. Heckenlaible's affidavit offers generalized statements regarding his personal use of water and the location from which his water is allegedly drawn. Mr. Heckenlaible states that he uses "water for personal, household, domestic purposes, [including gardening, irrigation, bathing, drinking]. Heckenlaible Affidavit at 1. It is unclear as to whether any additional allegations are made, as there are several portions of the affidavit that are lined out. However, even assuming that such allegations were levied against Powertech, they still fail to support a finding of standing in accordance with 10 CFR § 2.309 (d).

As is the case with Mr. Ebert's affidavit, Mr. Heckenlaible's affidavit fails to identify the nature and source of any potentially generated contaminants or any plausible mechanism or pathway for such alleged contaminants to reach his water supply. His statements also do not offer an allegation of potential injury to support his request for standing. Mr. Heckenlaible offers nothing more than statements of his personal water use and the location from which he *believes* his water is drawn. Without more, these statements fall well short of satisfy the Commission's standing requirements, as standing can only be shown by alleging an actual or threatened injury-in-fact. *See Yankee Atomic Elec. Co.*, 48 NRC at 195; *see also Atlas Corp* (Moab, Utah Facility), LBP-97-9, 45 NRC 414, 425-426 (1997) (noting that a petitioner has not shown any reasonable nexus between himself or herself and any purported radiological impacts, when, despite assertions about potential facility-related airborne and waterborne radiological contacts, he or she has not delineated these with enough concreteness to establish some impact on him that is sufficient to provide him or her with standing).

### **3. Affidavit of Susan Henderson**

The third affidavit submitted by Petitioners in support of their Request is the affidavit of Susan Henderson. Ms. Henderson's affidavit offers several allegations regarding the proposed Dewey-Burdock ISR project and, as such, Powertech will address each allegation in turn below.

#### **i. Henderson Affidavit Sections 4-6 & 8**

These Sections of the Henderson Affidavit offer allegations regarding potential ground water contamination from the proposed Dewey-Burdock ISR project. It is alleged that the proposed project will result in excursions that will contaminate Ms. Henderson's water supplies dedicated to business and personal use. *See* Henderson Affidavit at 1-2. It is further alleged that Ms. Henderson draws water from a "deep-sourced spring" on her ranch that she understands to be "affected by local and other underground water sources in the area," and drawing water from the Madison aquifer or Lakota sandstone could be a source of injury if contaminants were released from the proposed Dewey-Burdock ISR site. *Id.* These allegations purport to be supported by a statement by the affiant that, based on "published scientific research studies," the aquifers intended to host ISR operations at the proposed Dewey-Burdock ISR site, as well as those above and below, flow towards Ms. Henderson's property. *Id.* These allegations are not sufficient to support a demonstration of standing.

These sections of Ms. Henderson's affidavit offer statements regarding water sources where Ms. Henderson allegedly draws water from for personal and business purposes and that water from the proposed Dewey-Burdock ISR site flows towards her property. However, Ms. Henderson does not cite to anything other than her "understanding" that water flows from the portion of the Inyan Kara aquifer proposed to host ISR operations towards her property where she draws water from the Lakota Sandstone for domestic and stock watering use. As stated in

*Sequoyah Fuels*, it must be demonstrated that an alleged injury is fairly traceable to the proposed action, and it is dependent on whether the chain of causation is plausible and not whether the cause of injury flows directly from the challenged action. *See* 40 NRC at 75. An allegation of injury based solely on Ms. Henderson’s “understanding” of where water flows from the proposed Dewey-Burdock ISR site does not demonstrate a plausible chain of causation.

Ms. Henderson’s affidavit also does not point to any expert testimony or specific data or information that demonstrate the directional flow within the Inyan Kara formation from the proposed Dewey-Burdock ISR site towards her home, which is some eighteen (18) miles to the southeast. *See Duke Energy Corp.* (Oconee Nuclear Station, Units 1, 2, and 3), CLI-99-11, 49 NRC 328, 334, 338 (1999) (stating that Parts 2.309(f)(1)(ii, v, & vi) was promulgated “to raise the threshold bar for an admissible contention” and prohibit “notice pleading, with the details to be filled in later” and “vague, un[i]particularized contentions”). Further, absent an obvious potential for harm, “it becomes [petitioner’s] burden to provide a ‘specific and plausible’ explanation of how the action will affect her.” *See Nuclear Fuel Services, Inc.*, CLI-04-13, 59 NRC at 248 (finding no obvious potential for harm at a petitioner’s property 20 miles from the site of a facility that converted high-enriched uranium to low-enriched uranium).

**ii. Henderson Affidavit Sections 7, & 9-11**

These Sections of the Henderson Affidavit offer generalized allegations regarding past activities in the area of the proposed Dewey-Burdock ISR project, including former United States Army operations and past exploration drilling and mining activities, and make reference to “studies” regarding “potential natural inter-mixing” of local aquifers. *See* Henderson Affidavit at 2. These allegations are insufficient to satisfy the Commission’s requirements for standing, because they do not allege a *concrete and particularized* injury to Ms. Henderson. Even taken in

concert with the other Sections of her Affidavit, these allegations do not satisfy standing requirements, as they do not articulate an aspect of Powertech's proposed operation that will result in a release of contaminants from the proposed Dewey-Burdock ISR site to a plausible pathway by which such contaminants potentially could migrate to Ms. Henderson's property, and they do not offer any scientific explanation as to how contaminants could migrate over a course of eighteen miles to her property. As stated in *Hydro Resources* and cited in *Crow Butte*, a petitioner must demonstrate a plausible pathway for contaminants to migrate and cause harm, and Ms. Henderson has not demonstrated through her own or expert opinion that contaminants indeed would migrate to her property in her lifetime and cause the harm she alleges in her affidavit. 67 NRC at 273 citing *LBP-98-9*, 47 NRC 261, 275 (May 13, 1998); see also *Fansteel*, CLI-03-13, 58 NRC at 203. Thus, without a plausible explanation of how harm will be realized by her, these allegations are insufficient to show standing. See *Nuclear Fuel Services, Inc.*, CLI-04-13, 59 NRC at 248 (2004)

Additionally, Section 7 of the Affidavit does nothing more than allege that past activities in the area of the proposed Dewey-Burdock ISR site have cause the current "watershed" to become contaminated. Sections 9 through 11 of the Affidavit offer nothing more than speculative allegations that there could be "potential natural inter-mixing of aquifers," that historic uranium mining caused contamination of water sources based on a statement from the United States Army, and that alleged "abandoned and improperly plugged exploration holes" along with alleged fractured geologic conditions would cause "intermixing and contamination of aquifer[s] [sic]." Henderson Affidavit at 3. These allegations do not offer any demonstration that any contaminants generated at the proposed Dewey-Burdock ISR site will have a plausible pathway for such contaminants to migrate from the proposed site to Ms. Henderson's property.

*See Crow Butte*, LBP-08-24, slip op. at 12, 68 NRC at 705. Ms. Henderson does not refer specifically to any expert testimony that demonstrates that groundwater migrates from the proposed Dewey-Burdock ISR site towards her property in South Dakota. Without more, these allegations do not offer a concrete and particularized threat of injury-in-fact and does not allege a plausible pathway through which contaminants would flow to Ms. Henderson's property and cause her harm. *See* 10 C.F.R. § 2.309(d)(iii & iv). Thus, these Sections of the Henderson Affidavit are insufficient to demonstrate standing.

**iii. Henderson Affidavit Section 12**

Section 12 of the Henderson Affidavit alleges that NRC and other government agencies are required to protect "my air, and certainly my surface and ground water upon which I depend on for domestic and agrarian use of my land, from mining operations which may potentially pollute them," This allegation does not satisfy the Commission's requirements for standing.

Section 12's allegation that NRC needs to protect against significant adverse environmental impacts associated with ISR operations may be accurate, but it fails to allege any specific failure by NRC to fulfill its responsibilities in a manner that could cause potential harm to Ms. Henderson. It is well-settled that a claim that an applicant has violated or likely will violate the law does not create a presumption of standing, without some showing that the violation could harm the petitioner. *See International Uranium (USA) Corp. (White Mesa Mill)*, CLI-01-18, 54 NRC 27, 30 (July 30, 2001). Ms. Henderson's allegation basically assumes that NRC will allow Powertech to violate applicable law and regulations in contravention of its responsibility under the AEA to protect public health and safety and the environment. As such, this statement does not satisfy appropriate Commission standing requirements. *See In the Matter*

*of Pacific Gas and Electric Company* (Diablo Canyon Power Plant, ISFSI), LBP-02-23, 56 NRC 413, 439-441 (December 2, 2002)

**iv. Henderson Affidavit Sections 13 & 23**

Section 13 of the Henderson Affidavit alleges generalized concerns about the ability of bonds or other financial assurance to address the potential for uranium recovery companies to take profits from recovery operations and leave a site contaminated. *See id.* This allegation does not satisfy the Commission’s standard for standing, as it constitutes a collateral attack on 10 CFR Part 40, Appendix A, Criterion 9 which establishes uranium recovery financial assurance requirements. Currently, pursuant to Criterion 9 and subsequent decisions in the *Hydro Resources* case (recently affirmed by the United States Court of Appeals for the Tenth Circuit),<sup>8</sup> the Commission has regulations and legal/regulatory interpretations in place to address Ms. Henderson’s concern. The statement that the proposed Dewey Burdock ISR project will result in Powertech “skip[ping] out, leaving cleanup cost to the public” is a direct contradiction of the Criterion 9 requirements that the Commission and the Tenth Circuit have affirmed for ISR facilities. *See Northeastern Nuclear Energy Co.* (Millstone Nuclear Power Station), CLI-01-10, 57 NRC 273, 287 (2001); *see also GPU Nuclear, Inc.* (Oyster Creek Nuclear Generating Station), CLI-00-6, 51 NRC 193, 207 (2000) (stating that the Commission does not presume that a licensee will violate NRC regulations). Thus, for these reasons, this allegation is not sufficient to satisfy the Commission’s requirements for standing.

Section 23 of the Henderson affidavit alleges that there are concerns amongst the group that “we lose control over who ultimately gets the uranium mined here” and that location of the proposed Dewey-Burdock ISR project poses jurisdictional issues that will result in “only

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<sup>8</sup> *See Morris v. U.S. Nuclear Regulatory Com’n*, \_\_ F.3d \_\_, 2010 WL 761075 (10<sup>th</sup> Cir. 2010).

minimal protection from local theft of yellowcake for terrorist purposes.” CWA Affidavit at 3. These allegations do not satisfy the Commission’s requirements for standing.

The only site-specific allegation offered by this section is that the location of the proposed Dewey-Burdock ISR project lies in a rural, multi-jurisdictional area that may render law enforcement insufficient regarding the off-site transportation of yellowcake product to a conversion facility for introduction into the nuclear fuel cycle. The CWA states “[t]here are also security questions around the idea of permitting yellowcake production in a remote area where there are few law enforcement resources.” *Id.* Initially, these allegations do not identify any previous security problems with the transportation of yellowcake from uranium recovery facilities, which has routinely taken place since the 1950s, nor do they identify any site-specific aspect of the Dewey-Burdock license application pertaining to yellowcake production and transportation that would raise concerns regarding their security during transport. Yellowcake production and transportation are governed by specific, mandatory license conditions and NRC and United States Department of Transportation (DOT) regulations. Accordingly, these allegations raise an impermissible challenge to existing NRC and DOT regulations regarding transportation of yellowcake product. As stated in 10 C.F.R. § 2.335, a contention that challenges an NRC regulation should be dismissed as “no rule or regulation of the Commission...is subject to attack...in any adjudicatory proceeding. *See* 10 C.F.R. § 2.335(a). Based on these two items, these allegations do not satisfy the Commission’s requirements for standing.

**v. Henderson Affidavit Sections 14-16, 18**

These Sections of the Henderson Affidavit offer generalized allegations regarding radiation risks associated with uranium mining, local concerns regarding potential

contamination, and the temporary nature of economic benefits. *See* Henderson Affidavit at 3-4. These allegations are insufficient to demonstrate standing, as they offer generalized concerns about the health and welfare of entities other than the affiant. *See Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), LBP-78-11, 7 NRC 381, 387, *aff'd* ALAB-470, 7 NRC 473 (1978) (concluding that a petitioner cannot assert the rights of third parties as a basis for intervention). Further, many of the allegations in these Sections allege generalized concerns regarding protection of the environment. Thus, these allegations cannot constitute a showing of standing because, as stated in *International Uranium (USA) Corp.*, “injury-in-fact cannot be asserted on the footing of nothing more than a broad interest shared with many others—in environmental preservation.” 55 NRC at 39.

**vi. Henderson Affidavit Section 17**

Section 17 of the Henderson Affidavit alleges a concern regarding potential radiological air emissions from the proposed Dewey-Burdock ISR project. Ms. Henderson alleges that “I am concerned that surface water used by livestock and other animals will become contaminated over thousands of acres. This allegation is insufficient to support a showing of standing, because it fails to identify a plausible pathway by which radiological *air emissions* will contaminate surface water located near the site, which is eighteen (18) miles from her property. Ms. Henderson does not identify any particular source or type of radiological air emissions from the proposed site, any wind directional data, any particular surface water source or type that will be contaminated or any data or information regarding potential contaminant concentrations in such surface water. *See Nuclear Fuel Services Inc.*, 59 NRC at 248. Accordingly, there is no basis to demonstrate a concrete and particularized harm to her. Thus, this allegation fails to satisfy the Commission’s requirements for standing.

**vii. Henderson Affidavit Section 21**

Section 21 of the Henderson Affidavit alleges that Powertech should not be granted an aquifer exemption under EPA's SDWA in order to perform ISR operations at the proposed Dewey-Burdock ISR site. *See* Henderson Affidavit at 4. This allegation should be disregarded by the Licensing Board, as it is outside the scope of this proceeding as defined in the January 5, 2010 Federal Register notice and the Dewey-Burdock license application.

As discussed above and pursuant to the SDWA, Congress tasked EPA with the development of regulations to protect USDWs and, in appropriate cases, exempt such underground water sources from classification as a USDW so that activities such as ISR operations may be conducted. *See* 40 C.F.R. § 144 *et seq.* Moreover, as part of the development of its regulations, EPA promulgated requirements for aquifer exemptions that remain in effect today. These regulations require that a proposed aquifer, *or portion thereof*, that is to be used for proposed ISR operations *cannot now nor ever in the future* be used as a public drinking water source. *See* 40 C.F.R. § 146.4. But, with respect to the instant case, the aquifer exemption process is a wholly separate statutory and regulatory regime from the Commission's AEA licensing program. Thus, this allegation does not satisfy the Commission's requirements for standing to intervene in this proceeding.

**viii. Henderson Affidavit Sections 20 & 22**

Section 20 of the Henderson Affidavit states that a recent amendment to South Dakota regulations removing "the requirement that any in-situ leach mining company to prove it could return ground water to baseline conditions before it could get a mining permit" causes concern on Ms. Henderson's part. Further, Section 22 of the Henderson affidavit involves an allegation that Powertech is taking advantage of what they consider "limited and poorly financed"

environmental regulatory capabilities of South Dakota, and that Powertech filed its Dewey-Burdock application with NRC because they “can get by without strict enforcement of already weakened regulations and laws designed to protect our water...” Henderson Affidavit at 4. These statements do not satisfy the Commission’s requirements for standing.

Sections 20 and 22’s allegations fail to satisfy standing requirements for a number of reasons. First, the Henderson affidavit is incorrect to suggest that South Dakota has authority to issue the three main licenses/permits associated with the proposed Dewey-Burdock ISR project: (1) AEA source/11e.(2) byproduct material license; (2) UIC permit; and (3) aquifer exemption. The AEA license is to be issued, if approved, by NRC and the UIC permit and aquifer exemption will be issued, if approved, by EPA. Thus, Section 22’s statement that Powertech is taking advantage of “weakened” South Dakota regulations cannot constitute grounds for standing. Second, under AEA Section 274, the Commission is permitted to discontinue its regulatory authority over certain AEA materials and operations and to allow States to assume such authority if they have the resource and expertise to regulate such materials and operations. *See* 42 U.S.C. § 2021 (2010). At this time, South Dakota does not have Agreement State authority over source material, 11e.(2) byproduct material or uranium milling processes. As a result, Powertech’s Dewey-Burdock license application must be submitted to NRC in order to obtain the appropriate combined source and 11e.(2) byproduct material license to construct and operate the proposed Dewey-Burdock ISR project. Thus, these allegations are not within the scope of this proceeding as the Commission has exclusive AEA authority over uranium milling unless and until South Dakota assumes AEA Section 274 Agreement State authority over such activities.

Moreover, Sections 20 and 22 also do not allege any particularized injury in accordance with the Commission's requirements for standing. Therefore, these allegations should be rejected.

#### **4. Affidavit of Dayton Hyde**

The fourth affidavit submitted by Petitioners in support of their Request is the affidavit of Dayton Hyde. Mr. Hyde's affidavit offers several allegations regarding the proposed Dewey-Burdock ISR project and, as such, Powertech will address each allegation in turn below:

##### **i. Hyde Affidavit Sections 8 and 9**

Section 8 of the affidavit offers generalized statements regarding potential impacts to wild horses on the affiant's Wild Horse Sanctuary if the Cheyenne River were to be contaminated. *See* Hyde Affidavit at 2. Section 9 alleges that "mine waste or other contaminants [sic] containing toxic and/or carcinogenic heavy metals and arsenic by the proposed Powertech mining operation" will migrate to portions of the Cheyenne River via Beaver and Pass Creeks and contaminate the Cheyenne River where Mr. Hyde's horses are located as a result of surface or surface impacting spills. *Id.* This allegation does not allege any mechanism that could lead to a failure of controls at the proposed Dewey-Burdock ISR project that would allow contaminants to migrate off-site and reach the Cheyenne River. Further, the allegation fails to explain that Mr. Hyde's proposed Wild Horse Sanctuary is located about thirty five (35) river miles downstream from the proposed Dewey-Burdock ISR site, the intersections of the Beaver and Pass Creeks with the site, and the intersections of these Creeks and the Cheyenne River.<sup>9</sup> Thus, this allegation does not satisfy the Commission's requirements for

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<sup>9</sup> Mr. Hyde's affidavit also does not make note of the fact that ten (10) intermittent streams other than Beaver and Pass Creek intersect the Cheyenne River before it reaches his property, including Bennett Canyon Creek, Driftwood Canyon Creek, Moss Agate Creek, Dry Creek, Red Canyon Creek, Cottonwood Creek, Sheep Canyon Creek, Plum Creek, Chilson Canyon Creek, and Hat Creek.

standing, as it does not allege a causal nexus between an alleged injury and the proposed Dewey-Burdock ISR project, and it does not allege a plausible pathway through which contaminants potentially migrate to a location where Mr. Hyde or his interests could be adversely affected. *See Crow Butte*, LBP-08-24, slip op. at 12, 68 NRC 691, 705 (November 21, 2008). (“On the other hand, if it were not plausible for contaminants to leave the area that is being mined, petitioners generally could have no cognizable injury, and hence could not be accorded standing.”)

**ii. Hyde Affidavit Sections 11 and 12**

Section 11 of the Hyde Affidavit alleges that “[t]he land here is highly fractured and there is no way the mining companies can guarantee that the Inyan Kara, the Madison, and the other major aquifers will not become polluted and unusable to Man and animals.” Hyde Affidavit at 3. Section 12 of the Hyde Affidavit makes generalized allegations that uranium mining operations are not safe and that “[i]t will be impossible to clean up our wells and aquifers once they are contaminated.” *Id.* These allegations are not specifically tailored to the proposed Dewey-Burdock ISR project and do not specifically allege an aspect of the project that could lead to the creation of contaminants that would become mobile and migrate to areas outside the proposed licensed area into the above-noted aquifers in a plausible manner that could cause harm to Mr. Hyde or his horses. *See Crow Butte*, LBP-08-24, slip op. at 12, 68 NRC at 705. Thus, this allegation is insufficient to satisfy the Commission’s standing requirements.

**iii. Hyde Affidavit Section 13**

Section 13 of the Hyde Affidavit alleges generalized concerns about the ability of bonds or other financial assurance to address the potential for uranium recovery companies to take profits from recovery operations and leave a site contaminated. Hyde Affidavit at 3. This

allegation does not satisfy the Commission’s standard for standing, as it constitutes a collateral attack on 10 CFR Part 40, Appendix A, Criterion 9 on uranium recovery financial assurance requirements. Currently, pursuant to Criterion 9 and subsequent decisions in the *Hydro Resources* case (recently affirmed by the United States Court of Appeals for the Tenth Circuit), the Commission has regulations and legal/regulatory interpretations in place to address Mr. Hyde’s concern. *See* 2010 WL 761075 (10<sup>th</sup> Cir. 2010). The statement that the proposed Dewey Burdock ISR project will result in Powertech “skip[ping] out, leaving cleanup cost to the public” directly contradicts Criterion 9 requirements that the Commission and the Tenth Circuit have affirmed for ISR projects. *Northeastern Nuclear Energy Co.*, CLI-01-10, 57 NRC at 287; *see also GPU Nuclear, Inc.*, CLI-00-6, 51 NRC at 207 (2000) (stating that the Commission does not presume that a licensee will violate NRC regulations). Thus, for these reasons, this allegation is not sufficient to satisfy the Commission’s requirements for standing.

#### **5. Affidavit of Lili Jones Jarding**

The fifth affidavit offered by Petitioners in support of their Request is the affidavit of Lili Jones Jarding. The Jarding affidavit offers several statements regarding personal water use, the location from which such water is believed to be drawn, the proposed water use from the Madison aquifer by the proposed Dewey-Burdock ISR project, and the affiant’s interest in the availability of clean water. *See* Jarding Affidavit at 1-2. The statements offered in the Jarding affidavit, while slightly more detailed than those in the Ebert and Heckenlaible affidavits, do not satisfy the requirements for standing under 10 CFR § 2.309(a) & (d)(1).

The Jarding affidavit contains several generalized statements regarding the types of personal use of water used by the affiant and the fact that the proposed drawdown in the Dewey-Burdock application of “up to 2,243 Million gallons of water from the Madison aquifer” will

lead to “a drawdown in the Minnelusa Aquifer” from which the affiant also claims water is drawn and is hydrologically connected to the Madison aquifer. *See id.* The affiant offers no expert testimony to support this allegation and does not offer any allegation of a “concrete and particularized” injury that plausibly will be inflicted as a result of “drawdown” at the proposed Dewey-Burdock ISR project. Accordingly, even with expert testimony, if no mechanism or pathway is established, such allegations are nothing more than “unfounded conjecture. *See International Uranium (USA) Corp.*, CLI-01-21, 54 NRC at 253.

The affiant also fails to provide any information that links use of water from the Madison aquifer over the Dewey-Burdock project’s lifecycle to a potential injury to the affiant. Rather, the affiant merely states with respect to the Madison aquifer, “my water comes from the Madison Aquifer,” and water use could “lead to a drawdown in the Minnelusa Aquifer.” *See Jarding Affidavit* at 1-2. Further, the only statement that the affiant makes that even references potential impacts is a broad statement that “I believe that the project proposed under this [Powertech] Application could have negative impacts on my supply of clean water.” *Id.* at 2. This statement does not provide any information or analysis that shows how Powertech’s proposed use of water would result in a lack of clean water for personal or other uses by the affiant. Thus, these statements also fail to establish the required “causal nexus” between the alleged injury and the proposed Dewey-Burdock ISR project. Therefore, as was the case in *Commonwealth Edison Co.* discussed above, the Jarding affidavit does not satisfy the Commission’s requirements for standing, because it fails to allege a “concrete and particularized injury” in accordance with Commission requirements. 48 NRC at 276, *aff’d*, CLI-99-4, 49 NRC 185 (1999). The affiant’s statements alleging that water use from the proposed project may cause drawdown which may cause a lack of clean water supply should be considered nothing more than mere speculation and

too remote to satisfy the Commission's standing requirements. *Compare Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), LBP-82-43A, 15 NRC 1423, 1449 (1982) (determining that allegations that a plant will cause radiologically contaminated food which a person may consume are too remote and too generalized to provide a basis for standing to intervene).

#### **6. Affidavit of David Frankel**

The sixth affidavit submitted by Petitioners in support of their Request is the affidavit of David Frankel. Like the affidavits of Mr. Ebert and Mr. Heckenlaible, Mr. Frankel's affidavit offers generalized statements regarding personal water uses and the location from which water is drawn for such personal uses. *See Frankel Affidavit at 1.*

As is the case with Mr. Ebert's and Mr. Heckenlaible's affidavits, Mr. Frankel's affidavit fails to offer a specific allegation of injury to support his request for standing. Mr. Frankel offers nothing more than statements of his personal water use and the location from which he *believes* his water is drawn. Without more, these statements fall well short of satisfy the Commission's standing requirements, as standing can only be shown by alleging an actual or threatened injury-in-fact. *See Yankee Atomic Elec. Co.*, 48 NRC at 195.

#### **7. The Clean Water Alliance by Dr. Liliias Jarding, Executive Director**

The seventh affidavit submitted by Petitioners in support of their Request is the affidavit on behalf of the Clean Water Alliance (CWA) filed by its Executive Director, Dr. Liliias Jarding. According to the its affidavit, the CWA "is a local Black Hills citizen's organization founded to educate ourselves and the community, and to protect our air, water, and soil resources, from the potential negative impacts of in-situ leach uranium mining in and surrounding the Black Hills." CWA Affidavit at 1. Further, CWA states that its members live in northern Nebraska and Rapid

City, South Dakota, “including near the proposed mining site.” *Id.* Given that the CWA affidavit offers several allegations, Powertech will address each in turn below:

**i. CWA Affidavit Sections 5 & 6**

Section 5 of the CWA affidavit alleges that there are studies that indicate “potential natural inter-mixing of aquifers in the proposed mining areas due to old unplugged drill holes and the lack of confining layers.” *Id.* at 2. Section 6 offers additional statements regarding abandoned drill holes that, “together with the fractured nature of the rock in the area, to result in intermixing and contamination of groundwater resources.” *Id.* These statements do not satisfy the Commission’s requirements for organizational standing.

Section 5 of the CWA Affidavit states that there is “no way mining companies can guarantee that the Inyan Kara, the Madison, and the other major aquifers will not become polluted and unusable to people and animals” are too generalized to satisfy the Commission’s standing requirements. CWA Affidavit at 2. These allegations do not specifically address the proposed Dewey-Burdock ISR project or the aspect(s) of the project that potentially would lead to contaminants migrating to areas outside the proposed licensed area through intermixing of aquifers to areas where members of the CWA could be impacted. Petitioner must demonstrate that the alleged injury is “concrete and particularized,” and not “conjectural” or “hypothetical.” Conclusory allegations regarding potential harm are insufficient as there must be a “realistic threat of direct injury.” *See International Uranium (USA) Corp.*, CLI-01-21, 59 NRC at 254. Moreover, the CWA affidavit does not specifically allege that one of its members potentially would be impacted by the proposed Dewey-Burdock ISR project. *See Northern States Power Co.*, CLI-00-14, 52 NRC at 47. Thus, without more, these statements do not provide the basis for standing to intervene in this proceeding.

**ii. CWA Affidavit Section 7, 8 & 10**

Section 7 of the CWA affidavit alleges generalized potential impacts from uranium mining in the Black Hills region, and Section 8 alleges that, hypothetically, “[i]f Powertech (USA) Inc.’s proposed in-situ-leach mine were to contaminate the water supplies of our communities and rural areas, it would be catastrophic as there are no other water supplies upon which our area could rely.” CWA Affidavit at 2. Section 10 also provides similar generalized statements that the history of ISR operations shows that they “have a history of accidents and spills.” *Id.* at 2. These statements do not satisfy the Commission’s requirements for standing.

CWA’s Sections 7 and 8 statements are nothing more than generalized statements that do not allege a concrete and particularized injury that is even remotely connected with the site-specific aspects of the proposed Dewey-Burdock ISR project. Sections 7 and 8’s statements do not allege any kind of injury-in-fact and, in fact, they do not even allege any specific injury to CWA or its members. Indeed, the Section 7 statements embody hypothetical allegations as its language states, “[i]f Powertech (USA) Inc.’s proposed in-situ leach mine were to contaminate the water supplies...” *Id.* at 10. Further, Section 10 merely discusses ISR operations in general and does not allege any mechanism or pathway that potentially could result in some specific harm to the CWA or any of its members. Given that the Commission’s standing requirements require an allegation of “actual or threatened” and not hypothetical injury and that such allegations be specifically linked to the proposed action, these Sections of CWA’s affidavit do not satisfy the Commission’s requirements for standing. *See International Uranium (USA) Corp.* 59 NRC at 254.

**iii. CWA Affidavit Section 9**

Section 9 of the CWA affidavit alleges that “[l]arge acreage public land in the area leased by local ranch operations, would be similarly impacted by any contamination of surface and subsurface water supplies.” CWA Affidavit at 2. This allegation fails the Commission’s requirements for standing, because there is no specific explanation of the manner in which the proposed Dewey-Burdock project will result in contamination to these public lands. Moreover, the affidavit does not state whether any of its members are “local ranch” operators that potentially could be adversely affected by the proposed Dewey-Burdock ISR project. As a result, the CWA has not alleged an injury-in-fact to its organizational interest in accordance with the Commission’s standards for organizational standing as, absent a showing of harm to one of its members, an organization must satisfy the same standing requirements as an individual by showing a discrete institutional injury to the organization itself. *See International Uranium (USA) Corp.*, 54 NRC at 252; *see also N. States Power Co.*, 52 NRC at 47.

**iv. CWA Affidavit Sections 11-13**

The remainder of the CWA affidavit involves allegations that NRC and other government agencies are required to protect “our air and our surface and ground water resources from potential negative impacts of in-situ leach mining operations,” that Powertech is a foreign corporation and decisions related to public health and safety will be made by foreign individuals, that Powertech is taking advantage of what they consider “limited and poorly financed” environmental regulatory capabilities from the South Dakota, and that Powertech filed its Dewey-Burdock application with NRC because they “can get by without strict enforcement of effective environmental laws.” CWA Affidavit at 3. These statements do not satisfy the Commission’s requirements for standing.

Initially, CWA's allegations that NRC needs to protect environmental aspects associated with ISR operations is not enough for a grant for standing. It is well-settled that a claim that an applicant has violated or will violate the law does not create a presumption of standing, without some showing that the violation could harm the petitioner. *See International Uranium (USA) Corp.* 54 NRC at 30. CWA's allegation is basically assuming that NRC will allow Powertech to violate the law in contravention of its responsibility under the AEA to protect public health and safety and the environment. As such, this allegation is nothing more than a statement that NRC will not enforce applicable federal AEA law. *See Northeastern Nuclear Energy Co.*, CLI-01-10, 57 NRC at 287; *see also GPU Nuclear, Inc.*, CLI-00-6, 51 NRC at 207 (stating that the Commission does not presume that a licensee will violate NRC regulations). Thus, this statement is does not satisfy appropriate Commission standing requirements.

Then, Sections 12 and 13 addresses Powertech alleged status as a "foreign corporation" and its alleged action to "get by without" proper enforcement of regulations associated with AEA-licensed ISR operations. First, the issue of whether Powertech is a foreign corporation is not a viable basis for two reasons: (1) Powertech (USA) is a United-States-based entity and is not a Canadian corporation, with all members of the Board of Directors and corporate executives being United States citizens and (2) even though Powertech's parent company is foreign, NRC regulations do not prohibit such companies from owning and operating ISR facilities. As stated in *Crow Butte*, "[o]ur regulations do not prohibit issuance of a materials license to a licensee wholly owned by a foreign parent." CLI-09-9, 69 NRC \_\_\_, slip op. at 38, 2009 WL 1393858 (May 18, 2009).

As noted above, under AEA Section 274, the Commission is permitted to discontinue its regulatory authority over certain AEA materials and operations and to allow States to assume

such authority if they have the resource and expertise to regulate such materials and operations. *See* 42 U.S.C. § 2021 (2010). At this time, South Dakota does not have Agreement State authority over source material, 11e.(2) byproduct material or uranium milling processes. As a result, Powertech's Dewey-Burdock application must be submitted to NRC in order to obtain the appropriate combined source and 11e.(2) byproduct material license to construct and operate the proposed Dewey-Burdock ISR project. Therefore, these allegations also are not within the scope of this proceeding as the Commission has exclusive AEA authority over uranium milling unless and until South Dakota assumes AEA Section 274 Agreement State authority over such activities.

**v. CWA Affidavit Sections 14 & 15**

Sections 14 and 15 of the CWA affidavit allege that there are concerns amongst the group that “we lose control over who ultimately gets the uranium mined here” and that location of the proposed Dewey-Burdock ISR project poses jurisdictional issues that will result in “only minimal protection from local theft of yellowcake for terrorist purposes.” CWA Affidavit at 3. These allegations do not satisfy the Commission's requirements for standing.

The only site-specific allegation offered by CWA is that the location of the proposed Dewey-Burdock ISR project lies in a multi-jurisdictional area that may render law enforcement regarding the off-site transportation of yellowcake product to a conversion facility for introduction into the nuclear fuel cycle. The CWA states “[t]here are also security questions around the idea of permitting yellowcake production in a remote area where there are few law enforcement resources.” *Id.* These allegations do not identify any previous security problems with the transportation of yellowcake from uranium recovery facilities, which has routinely taken place since the 1950s, nor do they identify any site-specific aspect of the Dewey-Burdock license

application pertaining to yellowcake production and transportation that would raise concerns regarding their security during transport. Yellowcake production and transportation are governed by specific, mandatory license conditions and NRC and United States Department of Transportation (DOT) regulations. Accordingly, these allegations raise an impermissible challenge to existing NRC and DOT regulations regarding transportation of yellowcake product. As stated in 10 C.F.R. § 2.335, a contention that challenges an NRC regulation should be dismissed as “no rule or regulation of the Commission...is subject to attack...in any adjudicatory proceeding.” *See* 10 C.F.R. § 2.335(a). Based on these two items, these allegations do not satisfy the Commission’s requirements for standing. Based on these two items, CWA’s allegations do not satisfy the Commission’s requirements for standing.

**8. Aligning for Responsible Mining by David Frankel, Legal Director**

The eighth and final affidavit submitted by Petitioners in support of their Request is the affidavit on behalf of ARM filed by its Legal Director, David Frankel. Similar to his personal affidavit, Mr. Frankel offers generalized statements regarding personal water uses and the location from which water is drawn for such personal uses for ARM’s members, three of which are individual affiants in Petitioners’ Request.<sup>10</sup> *See* ARM Affidavit at 1.

The ARM affidavit does not offer any credentials or other information that demonstrates the organization is a non-profit or other formal type of organization. Regardless, in order to gain standing in this proceeding, ARM must demonstrate a discrete institutional injury or must show that one of its members has authorized ARM to represent its interests *and* has individual standing to intervene. The ARM and its members’ affidavits do not accomplish either.

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<sup>10</sup> Mr. Theodore Ebert, Mr. Gary Heckenlaible, and Mr. David Frankel are three individual affiants identified as having authorized ARM to represent them in this Request.

The ARM affidavit fails to offer an allegation of injury to its institutional interests that would support a request for organizational standing. The affidavit offers nothing more than mere statements regarding ARM members' personal water use and the location from which Mr. Frankel *believes* their water is drawn. Without more, these statements fall well short of satisfying the Commission's standing requirements, as standing can only be shown by alleging an actual or threatened injury-in-fact. *See Yankee Atomic Elec. Co.*, 48 NRC at 195. Further, as shown above, all three identified affiants who have authorized ARM to represent their individual interests in this proceeding have failed to satisfy the requisite individual standing requirements. Thus, ARM has not satisfied the Commission's requirements for organizational or representational standing and, as such, their request for a hearing should be denied.

**B. Petitioners Have Failed to Proffer at Least One Admissible Contention**

As stated above, Powertech asserts that none of the Petitioners have adequately demonstrated standing to intervene in accord with 10 CFR § 2.309(d) and, as a result, Petitioners' Request should be denied. However, in the event that the Licensing Board determines that at least one Petitioner has standing to intervene, Powertech respectfully requests that the Licensing Board reject each contention for failure to satisfy the Commission's standard for admissible contentions at 10 C.F.R. § 2.309 (f)(1)(i-vi). Accordingly, Petitioners Request should be denied.

Prior to commencing its analysis of Petitioners' contentions, their Request cites to expert opinions and other documents. In many, if not all cases, Petitioners' contentions fail to specifically identify any aspects of these documents that specifically demonstrate that a given contention should be deemed admissible. Given that the Commission has stated that a simple reference to a large number of documents does not provide a sufficient basis for a contention and

that a petitioner must clearly identify and summarize the incidents being relied upon and identify and append specific portions of documents, Petitioners contentions should be rejected.

**1. Contention A: Alleged Failure to Accurately Describe the Affected Environment in the Dewey Burdock Application**

First, Petitioners' Contention A states that Powertech's Dewey-Burdock's license application "does not accurately describe the environment affected by its proposed mining operations or the extent of its impact on the environment as a result of its use and potential contamination of water resources...." Petitioners' Request at 34. Contention A alleges that this is impermissible, because the Dewey-Burdock license application does not adequately address the potential mixing of "contaminated groundwater in the mined aquifer with water in surrounding aquifers...." *Id.* Applying the Commission's standard for admissible contentions, Contention A should not be admitted.

Petitioners offer no explanation of the specific components of the Dewey-Burdock application that are inaccurate, no specific explanation of the specific water resources affected through intermixing in unidentified surrounding aquifers or a specific mechanism for drainage of unidentified contaminants into the Cheyenne River. Further, Contention A also does not offer any information demonstrating that there is a significant link between its allegations and a specific potential health and safety or environmental impact. *See Pacific Gas and Electric Co.*, LBP-02-23, 56 NRC at 439-441, *petition for review denied*, CLI-03-12, 58 NRC 185, 191 (2003). Thus, based on the lack of information in this contention and the fact that the Commission's procedures in 10 C.F.R. § 2.309(f)(1)(ii-vi) do not allow for "the filing of a vague, unparticularized contention,' unsupported by affidavit, expert, or documentary support," Contention A should not be admitted. *See N. Atl. Energy Serv. Corp.*, CLI-99-6, 49 NRC at 219.

**2. Contention B: Alleged Potential for Contamination of Groundwater Resources Outside the Proposed Uranium Recovery Zone**

Petitioners' Contention B alleges that Powertech's proposed Dewey-Burdock ISR project will "use and contaminate water resources...through mixing of contaminated groundwater in the mined aquifer with water in surrounding aquifers and drainage of contaminated water into the Cheyenne River." This allegation, according to Petitioners, will result in "harm to public health and safety." Under the Commission's standard for admissible contentions, Contention B should not be admitted.

As is the case with Contention A, Petitioners offer no explanation of the specific components of the Dewey-Burdock application that are inaccurate, no specific explanation of the specific water resources affected through intermixing in unidentified surrounding aquifers or a specific mechanism for drainage of unidentified contaminants into the Cheyenne River. Further, Contention B also does not offer any information demonstrating that there is a significant link between its allegations and a specific potential health and safety or environmental impact. *See Pacific Gas and Electric Co.*, LBP-02-23, 56 NRC at 439-441. Thus, based on the lack of information in this contention and the fact that the Commission's procedures do not allow for "the filing of a vague, unparticularized contention,' unsupported by affidavit, expert, or documentary support," Contention B should not be admitted. *See N. Atl. Energy Serv. Corp.*, CLI-99-6, 49 NRC at 219.

**3. Contention C: Alleged Violation of 10 CFR § 51.45(c) for Failure to Adequately Describe Cost Benefits in the Dewey Burdock Application**

Petitioners' Contention C alleges a violation of 10 CFR § 51.45(c) for failure "to include economic value of environmental benefits" citing Part 51.45(c) language requiring "to the extent that there are important qualitative considerations or factors that cannot be quantified,

those considerations or factors shall be discussed in qualitative terms.” Petitioners’ Request at 35. Petitioners conclude that “it is possible to quantify the qualitative considerations involved with negative impacts to the groundwater, surface water, Beaver Creek, Pass Creek, and Cheyenne River and the Application fails to conform to that requirement of Section 51.45(c).” *Id.* Under the Commission’s standard for admissible contentions, Contention C should not be admitted.

Initially, Petitioners cite to a study regarding wetlands in Australia prepared by an Australian University (the University of Adelaide) without providing any facts, reasoning or precedent for why it is relevant in any way to this proceeding. Given that Commission jurisprudence states that “providing any material or document as a basis for a contention, without setting forth an explanation of its significance, is inadequate to support the admission of the contention,” the reference to the article is immaterial to this proceeding. *See Fansteel*, CLI-03-13, 58 NRC at 205. The Dewey-Burdock license application assesses potential impacts to wetlands (i.e., Environmental Report, Appendix 3.5), and Petitioners fail to offer any contradictory information or documentation.

Petitioners state that Powertech fails to include “any quantification of the negative impacts predicted and estimated by the Applicant and mentioned in the Application...” Petitioners’ Request at 35. 10 C.F.R. Part 51 does not require license applicants to quantify the positive economic value of environmental benefits; but rather, it requires a “hard look” at potential positive and negative impacts of a proposal. *See Hydro Resources, Inc.* (Crownpoint Uranium Project), 2010 WL 761075 , slip op. at 21 (2010) *quoting Citizens’ Comm. To Save Our Canyons v. Kreuger*, 513 F.3d 1169, 1178 (10<sup>th</sup> Cir. 2008). Further, Petitioners also cite to two (2) articles regarding wetlands and other environmental items. Petitioners’ Request at 35. These

articles should be ignored, because Petitioners offer no information from such articles that attempt to contradict the Dewey-Burdock application. *See id.* Thus, because Petitioners' fail to provide any information linking the articles mentioned and their findings to a potential wetlands or water consumption impacts specifically affecting them as a result of the proposed Dewey-Burdock ISR site, Contention C should not be admitted.

**4. Contention D: Alleged Violation of 10 CFR § 51.45(c) and 10 CFR § 40.9 for Failure to Provide a Complete Application**

Petitioners' Contention D is primarily based on allegations offered by its experts Drs. LaGarry and Moran that "the Application fails to disclose all required information in a comprehensible manner." Petitioners' Request at 36. Contention D also states that "the Application violates Section 40.9 by being disorganized, and violates Section 51.45(c)'s requirement concerning analytical content as Dr. Moran opines that the Application presents information and interpretations in a technically inadequate manner." *Id.*

Contention D should not be admitted for several reasons. First, Petitioners misread the provisions of 10 CFR § 40.9. The provisions of 10 CFR §§ 40.9(a & b) do not impose a "organization" requirement on a license applicant. The language of Part 40.9(a) states:

"Information provided to the Commission by an applicant for a license or by a licensee or information required by statute or by the Commission's regulations, orders, or license conditions to be maintained by the applicant or the licensee shall be complete and accurate in all material aspects."

10 CFR § 40.9(a).

NRC Staff has deemed the application adequate for detailed technical and environmental review and, presumably, would not have done so if it is so disorganized that it cannot be usefully

examined.<sup>11</sup> Accordingly, Contention D’s statement that Powertech violates 10 CFR § 40.9 because it is “disorganized” should not be admitted.

Contention D also should not be admitted as Petitioners fail to demonstrate that a alleged violation of 10 CFR § 51.45 or 10 CFR Part 40, Appendix A, Criterion 5 is an admissible contention. First, Petitioners allege that Powertech’s license application violates Parts 51.45(c & e) because “the Application presents information and interpretations in a technically inadequate manner” and because of a failure “to adequately describe confinement of the host aquifer” and “fail[ure] to analyze properly secondary porosity in the form of faults and joints, artesian flow, and horizontal flow of water within the uranium-bearing strata. Petitioners’ Request at 37-38. In support of this Contention, Petitioners rely heavily on the submitted affidavits of Dr. Moran and Dr. LaGarry.

Petitioners’ allegations here misread the meaning of Part 51.45. Part 51.45 addresses the types of information required for an environmental report and Part 51.45(e) merely requires that adverse information known to the applicant be included in an applicant’s environmental report. Nowhere in this regulation does it specify the types of, and the extent to which, such adverse information should be disclosed. Indeed, Part 51.45(b)(1) states that potential impacts on the environment should be discussed “in proportion to their significance” and Part 51.45(b)(2) states that it should include any adverse impacts that cannot be avoided if the proposal is implemented. *See* 10 C.F.R. §§ 51.45 (b)(1 & 2). Thus, Part 51.45(b-d) provide parameters for information that should be submitted in an environmental report but do not prescribe any sort of “technical

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<sup>11</sup> It is important to note that, “[t]he completeness of [an] application is not a matter that this Board should or can decide...[as the] decision whether to accept the [application] for docketing is made by the NRC Staff.” *See* NRC Enforcement Policy at 336, [www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html](http://www.nrc.gov/about-nrc/regulatory/enforcement/enforce-pol.html), quoting *Concerned Citizens of Rhode Island v. NRC*, 430 F. Supp. 627, 634 (D.R.I. 1977).

adequacy” requirement. The parameters in these subsections only describe the categories of potential impacts that a license applicant should address in an environmental report.

Second, Petitioners also misread the applicability of 10 C.F.R. Part 40, Appendix A, Criterion 5 to Powertech’s license application. Criterion 5 specifically pertains to the management of uranium and thorium byproduct materials at a conventional uranium milling site with attendant uranium mill tailings impoundments. Therefore, Petitioners contention that this Criterion applies to pre-operational water quality discussions in the environmental report for the proposed Dewey-Burdock ISR facility is incorrect. Criterion 5(B), like all other Appendix A Criteria, were written to address potential impacts at *conventional uranium mills* and not ISR facilities. Only recently has the Commission determined that specific portions of Appendix A Criteria should be applied to ISR facilities as a matter of policy through license condition. *See* United States Nuclear Regulatory Commission, *Issuance of Regulatory Issue Summary (RIS) 2004-02 – Deferral of Active Regulation of Ground-Water Protection at In Situ Leach Uranium Extraction Facilities* (<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/reg-issues/2004/ri200402.pdf>).<sup>12</sup> Thus, Petitioners’ Contention D should not be admitted due to a failure to allege either a valid or specific legal violation.

**5. Contention E: Alleged Violation of 10 CFR § 40.32(d) Based on a Lack of Adequate Confinement in the Inyan Kara Aquifer**

Petitioners’ Contention E states that Powertech’s Dewey-Burdock license application violates 10 C.F.R. § 40.32(d) because “of lack of adequate confinement of the host Inyan Kara aquifer” and, thus, “would be inimical to public health and safety....” Petitioners Request at 39.

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<sup>12</sup> Indeed, NUREG-0706 entitled *Generic Environmental Impact Statement on Uranium Milling* specifically states that ISR projects are included in its analysis merely for completeness and not as projects that were anticipated in the promulgation of 10 CFR Part 40, Appendix A. *See* NUREG-0706 at 1-2. Given that NUREG-0706 was prepared in accordance with the passage of UMTRCA and the subsequent promulgation of Appendix A, Petitioners cannot link Criterion 5(B) with the proposed Dewey-Burdock ISR project in the manner they allege.

Petitioners also allege that, “so much is unknown about the area and its hydrology, and the inter-connection between the aquifers that it is not possible to provide assurance that the confinement will be adequate to protect public health and safety. *Id.* at 40. Contention E should not be admitted.

First, Petitioners’ misinterpret several aspects of Powertech’s license application. Petitioners’ expert Dr. LaGarry states that Section 3.3.2.2 of Powertech’s license application “concedes that the upper confining layers [are] thin and there are breaches in the upper confining layers....” *Id.* at 39. This opinion is based on a statement cited by Petitioners that, “[i]n order for ISL mining to be considered safe, the uranium-bearing, mined strata must be isolated from rocks above and below by confining layers.” *Id.* at 39.

Initially, Petitioners point to no portion of NRC’s 10 C.F.R. Part 40 regulations, Appendix A Criteria or any other regulatory guides or guidance that mandate that ISR processes cannot be conducted in an “unconfined” geologic area. In any event, Powertech’s license application addresses issues associated with confinement in the Inyan Kara Group in some considerable detail. For example, Section 3.3.2.2 describes the geological formations that make up the upper confining unit consisting of three formations: (1) the Skull Creek; the Mowry; and (3) the Newcastle. On the eastern side of the proposed site, there is no presence of the Skull Creek or the Mowry formation; however, the Fuson Member acts as the upper confining unit in these areas for the Lakota ore zone.<sup>13</sup> Powertech’s license application contains specific discussions of the presence of the Fuson Member as an upper confining layer in specific portions of the relevant aquifers discussed in the environmental report for the proposed Dewey-Burdock ISR site. Section 3.4.3.1.2 entitled *Inyan Kara Aquifer* states that, “[t]he Inyan Kara aquifer is

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<sup>13</sup> See Powertech License Application, Environmental Report, Plate 3.3-5, *Generalized Cross Section of Fall River County*.

comprised of two sub-aquifers, the Lakota and the Fall River, which are separated by the Fuson shale confining unit.” Further, Section 3.4.3.2 entitled *Site Hydrology: Inyan Kara Group* states, “[t]he Fuson member of the Lakota, underlying the Fall River, varies in Thickness from 40 to 70 feet.” Indeed, Section 3.3.2.2 specifically states that the Fuson Member is the uppermost member of the Lakota Formation and that it separates the Lakota and Fall River Formations. Additionally, Dr. LaGarry’s affidavit fails to state with specificity which aquifers or portions thereof are unconfined. This failure should result in rejection of the contention. *See International Uranium (USA) Corp.*, 59 NRC at 254; *see also Fansteel*, 58 NRC at 203.

Second, Petitioners’ claim that Powertech’s license application “mentions ‘thousands of exploratory wells’ along with wells that supply drinking water (the uranium-bearing strata are a local drinking water supply)<sup>14</sup> and water for livestock” is not sufficient to support an admissible contention. Petitioners’ Request at 39. Petitioners fail to offer any specific potential harm based on expert scientific or technical opinion or documents indicating that exploration wells will result in significant adverse impacts on Powertech are proposed ISR operations. *See International Uranium (USA) Corp.*, 59 NRC at 254.

Third, Petitioners statement that, “many of these wells are abandoned and most likely improperly plugged” is not adequate to support an admissible contention. Petitioners’ Request at 39. Section 7.3.1 of Powertech’s EPA Class III UIC permit application states that “[i]t is Powertech’s determination that improperly plugged wells or holes do not presently exist within

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<sup>14</sup> It is important to note that Petitioners’ statement that “the uranium-bearing strata are a local drinking water supply” is in express contradiction with EPA’s SDWA requirements for aquifer exemptions. ISR techniques are only permitted in aquifers, or portions thereof, that *cannot now, nor ever in the future, serve as a public drinking water source*. Given that this is the requirement applicable for drinking water sources, the Licensing Board should view this statement with skepticism.

the proposed production area.”<sup>15</sup> Petitioners offer no factual information to dispute Powertech’s conclusion in its license application, because they offer no evidence that any exploration or other historic drill holes were improperly plugged other than to offer the conclusory statement that they are “most likely improperly plugged.” Petitioners’ Request at 39. Moreover, this allegation is entirely unsupported by any expert testimony and, accordingly, is nothing more than a speculative conclusion. *See Fansteel*, CLI-03-13, 58 NRC at 203. Thus, this allegation cannot support an admissible contention.

Lastly, Contention E does not pose a significant, specific safety issue, as it does not allege that any potential migration of site-generated constituents could result in harm to a particular Petitioner. Contention E only alleges that the combination of exploration wells and operations at the site could result in a scenario “potentially creating circumstances in which any one of these wells could allow lixiviant to breach confinement.” Such generalized allegations do not identify a specific mechanism or plausible pathway for constituents to migrate from the proposed Dewey-Burdock ISR site to a particular Petitioner and a specific allegation of harm from such constituents. These allegations merely state that the proposed Dewey-Burdock operations “potentially” could create conditions where “lixiviant could breach confinement” are nothing more than “unfounded conjecture” and should not be admitted. *International Uranium (USA) Corp.*, 59 NRC at 252.

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<sup>15</sup> It is important to note that abandoned wells is a State and EPA jurisdictional item. As a result, Powertech has addressed the plugging and abandonment of historic or other wells in its EPA’s Class III UIC permit application. The majority of exploration holes at Dewey-Burdock were drilled in 1970 and 1980. The State utilized well plugging rules in effect at the time and, to Powertech’s knowledge, all holes were plugged in accordance with such State requirements.

**6. Contention F: Alleged Violation of 10 CFR §§§ 51.45(b)(5), (c), & (e) for Failure to Adequately Discuss Irretrievable Commitment of Resources Regarding Groundwater Consumption from Operations and Groundwater Restoration**

Petitioners' Contention F states that Powertech's Dewey-Burdock license application violates 10 CFR §§ 51.45(b)(5), (c), and (e) by failing to "describe irretrievable commitment of resources in the form of water resources taken from the Inyan Kara and Madison Aquifers in the form of the 'bleed' and in connection with restoration..." Petitioners Request at 40.

Contention F should not be admitted for the same reasons as Contention D above. Part 51.45 provides specific parameters for the types of information to be submitted in an environmental report supporting a license application, but it does not prescribe the form or specificity of the information to be offered. In Contention F, Petitioners allege that Powertech fails to describe the "irretrievable commitment of resources" pertaining to water consumption. This Contention fails because Powertech's environmental report contains several sections that describe potential impacts associated with groundwater consumption. For example, Sections 4.6.2.6 and 4.6.2.7 describe potential impacts associated with groundwater consumption. Section 4.6.2.6 specifically deals with potential impacts associated with groundwater consumption during operations and groundwater restoration, and Section 4.6.2.7 describes potential impacts associated with groundwater consumption resulting from simultaneous operational and restoration activities. Another section of Powertech's environmental report, Section 8.1, provides a summary of potential groundwater impacts. The presence of these analyses demonstrate that Petitioners' claim of a failure to describe potential groundwater consumption impacts is nothing more than a claim that such analyses are inadequate. Thus, as shown above regarding Contention D, Part 51.45 does not prescribe form or specificity requirements for license applications. Additionally, Petitioners do not explain "with specificity" particular safety

or legal reasons requiring rejection of the contested application. *See Millstone*, CLI-01-24, 54 NRC at 359-360 (stating an “admissible contention must explain, with specificity, particular safety or legal reasons requiring rejection of the contested [application]”). As a result, Contention F should not be admitted.

**7. Contention G: Alleged Violation of 10 CFR § 51.45(c) & (e) for Failure to Adequately Discuss Potential Impacts from Receipt and Processing of Uranium-Loaded Resins From Wellfields Outside of Dewey Burdock**

Petitioners’ Contention G alleges that Powertech violated 10 CFR §§ 51.45(c & e) by failing to “explain the details involved and exposure related to Applicant’s proposal to ‘receive and process uranium loaded resins from other Proposed Projects such as Powertech’s nearby Aladdin and Dewey Terrace Proposed Satellite Facility Projects....” Petitioners’ Request at 40. Petitioners’ base their contention on the fact that Powertech provided insufficient information, because “[t]he rest of the ER and Supplement talk only about the impacts of transporting and processing uranium from the Dewey-Burdock sites. *Id.* Under the Commission’s standard for admissible contentions, Contention G should not be admitted.

Contention G fails to satisfy the Commission’s standard for admissible contentions at 10 C.F.R. § 2.309(f)(1)(iii) for failure to demonstrate that its substance is within the scope of this proceeding. The January 5, 2010 Federal Register notice and the Dewey-Burdock license application define the scope of this proceeding as Powertech’s request to construct and operate an ISR facility at the proposed Dewey-Burdock site in South Dakota. *See generally* 75 Fed. Reg. 467. More specifically, the Dewey-Burdock license application provides information and analyses regarding the recovery of uranium from proposed wellfields at the Dewey and Burdock project sites and the processing of uranium-loaded resins from such recovery operations at a central processing plant to be located at the Burdock project site. *See* Powertech Dewey-

Burdock License Application, Environmental Report Section 1.3 & Technical Report at 1.9.

While Petitioners accurately cite to statements involving potential *future* recovery and processing of uranium-loaded resins from other proposed ISR sites, they ignore the fact that this Dewey-Burdock license application is strictly limited to the recovery and processing of uranium only from the Dewey and Burdock sites. *Id.*

Powertech included the above-noted statement in its license application as a “forward-looking” statement to alert NRC Staff to the fact that its central processing facility potentially could continue to operate after the uranium resources at the Dewey and Burdock sites have been exhausted and the wellfields have been restored. Receipt and processing of uranium-loaded resins from future sites will be subject to a license amendment to the proposed Dewey-Burdock project license and, therefore, will be subject to an independent opportunity for a hearing when any such a license amendment application is submitted. Thus, because the substance of this contention is outside the scope of this proceeding, Powertech asserts that Contention G should not be admitted.

**8. Contention H: Alleged Violation of 10 CFR §§ 51.45(c) & (e) for Failure to Include Adequate Information on Local Connection of Aquifers**

Petitioners’ Contention H states that Powertech’s license application violates 10 C.F.R. § 51.45 (c & e) regarding “hydraulic connection of aquifers,” because “the Applicant provides information that is not local and fails to include studies that are closer to the proposed project area.” Petitioners Request at 41. Specifically, Petitioners allege that Section 3.4.3.1.7 of Powertech’s environmental report does not provide adequate information regarding this issue. *Id.*

Contention H should not be admitted for the same reasons as Contentions D and F. As discussed above, Part 51.45 prescribes parameters for information to be submitted in a license

application's environmental report, but it does not prescribe any form or specificity requirements for the type or extent of information that should be included in such environmental report. With that said, Powertech's environmental report, Section 3.4.3.1.7 does indeed discuss hydraulic connection of aquifers, but Petitioners fail to account for the other sections of the environmental report that address "local" aspects of site aquifers and their hydrology. For example, Section 3.4.3.2 specifically discusses Dewey-Burdock site hydrology, and Powertech's technical report, Section 2.7.2.2 discusses the site hydrology. Thus, Contention H does nothing more than insist that a violation of Part 51.45 has occurred because information submitted on a given issue in Powertech's environment report is inadequate. A violation of Part 51.45 cannot occur based merely on a claim of "inadequacy," and Contention H does not allege specific "safety or legal reasons" requiring rejection of the Dewey-Burdock license application. *See Millstone*, 54 NRC at 359-360. Therefore, Contention H should not be admitted.

**9. Contention I: Consolidated Factual and Environmental Allegations**

Petitioners' Contention I offers at least one hundred statements alleging potential violations of 10 CFR Part 40, Appendix A and 10 CFR §§ 51.45(c) & (e). In order to minimize redundant analyses of these statements, Powertech has consolidated these statements that address similar potential violations of such regulations into separate subsections below.

**i. Alleged Violations of 10 C.F.R. § 51.45 & 10 C.F.R. Part 40, Appendix A**

Prior to providing the Licensing Board with a discussion of the issues raised by Petitioners under Contention I regarding alleged violations of 10 C.F.R. § 51.45 and 10 C.F.R. Part 40, Appendix A in the Dewey-Burdock license application, Powertech believes that it is important to provide the Board with a short reiteration of the applicability and relevance of these regulations to the license application, as discussed above. First, 10 C.F.R. § 51.45 pertains to the

Commission's requirements for environmental reports for proposed 10 C.F.R. Part 40 licenses, including combined source and 11e.(2) byproduct material licenses for ISR facilities. However, as stated above, Part 51.45 does not prescribe any form or specificity requirements for information submitted in an environmental report for a Part 40 facility; but rather Part 51.45 merely provides a license applicant with specific parameters for the type of information that should be assessed in an environmental report.<sup>16</sup> Petitioners alleging deficiencies or errors in a license application must indicate some significant connection between the claimed deficiency and potential adverse impacts to either public health and safety or the environment. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419. Thus, any allegation by Petitioners that Powertech has failed to offer a discussion of certain issues in a manner prescribed in their Request should not be sufficient to support an admissible contention.

With that said, Powertech has identified each of Petitioners' claims in Contention I that would fall within the parameters of an alleged violation of 10 C.F.R. § 51.45 and/or 10 C.F.R. Part 40, Appendix A. These claims are copied in order of presentation for the Board's convenience:

“(1) a coordinated, statistically-sound data set for **all** Baseline Water Quality (both surface and ground water) is presented in these documents—as is required in NURGEG--1569. Powertech states that they have arbitrarily selected some analyses from the voluminous, historic TVA data, but the reviewer is never allowed to see a statistical summary of the total original data set. Portions of the relevant data are scattered throughout the Appendices of the various documents, and disingenuously organized to leave out all baseline data that had concentrations reported below the detection limits (i.e. “less than” values). Obviously, this approach biases the data. *Powertech must statistically summarize 42 all historic water quality data and all recently collected data in separate tables, including all “less than values”. Both historic and recent baseline data should be segregated by water-bearing unit.* Failure to do so violates the above-referenced

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<sup>16</sup> *See Sys. Energy Res., Inc.* (Early Site Permit for Grand Gulf ESP Site), CLI-05-4, 61 NRC 10, 13 (2005) (“At NRC licensing hearings, petitioners may raise contentions seeking correction of significant inaccuracies and omissions in the [ER or EIS]. Our boards do not sit to ‘flyspeck’ environmental documents or to add details or nuances”).

NRC Regulations. The Dewey-Burdock project area has been historically mined and thousands of exploration holes have been drilled within the properties. Hence, it is imperative that high-quality baseline data be supplied to evaluate the actual extent of impacts to water resources, and the success of containment or aquifer restoration.

(2) detailed data on the chemical composition of pregnant solutions (ore reacted with lixiviant) and detailed analyses of these waters following ion exchange. Mining projects that have progressed to this stage routinely conduct Feasibility Studies and release Feasibility Reports that contain such chemical data. For example, a review of the D-B properties by Smith & Assoc. (2005) mentions that such a Feasibility study was performed for TVA. Leaching of such ores traditionally mobilizes elevated concentrations of many metals and metalloids, plus other constituents: i.e. arsenic, antimony, molybdenum, vanadium, uranium, strontium, iron, manganese, lead, lithium, nickel, chromium, sulfate, chloride, etc. Reliable, complete baseline data are crucial for understanding the chemistry of potential releases to the environment.

(3) detailed data on the chemical composition of liquid wastes that may undergo deep well injection and / or land application. Such data should also be available in Feasibility 43 Studies.

(4) a realistic description and evaluation of possible water-related impacts, as contemplated by Criterion 5B of Appendix A of Part 40. It is unlikely that the process waters can be contained within the project boundaries given all of the evidence of:

- thousands of exploration boreholes drilled since the 1950's, many of which were not correctly abandoned;
- hydrogeologic leakage between the ore-bearing formations;
- faults / fractures acting as potential pathways;
- geologic facies inter-connections;
- vertical "breccia pipes" and collapse structures;
- diapir structures?
- historic mine workings as flow pathways.

(5) a rational and analytic discussion of site fluid containment using current research literature.

(6) realistic estimates of water resources to be irretrievably committed as required by Section 51.45(b)(5); rather, the Environmental Report unreasonably minimizes the potential project water impacts [p.8-2], where they estimate that net ground water consumption will be 320 gpm, which is **168.2 gals. per year**. After the anticipated lifeof-mine, 17 years, net ground water consumption would equal roughly **2.86 Billion gallons**. (Emphasis added.)

(7) The discussion of geological "formations of interest" at the Dewey-Burdock site 44 excludes the Madison and Minnelusa Aquifers, which would be used for large amounts of project water (Section 3.3.2.2 ER).

- (8) The potential impacts of the presence of 26 flowing artesian wells on the proposed project or the environment are not discussed (Section 3.4.1.2 ER).
- (9) In Section 3.4.2.2 ER, the applicant discusses surface water quality. This discussion includes only the State of South Dakota's Beneficial Use Numeric Criteria. It neglects to discuss known contamination from past uranium activities in the area, including radioactive contamination of the Cheyenne River.
- (10) Section 3.4.3.1.3 ER provides a limited discussion of porosity in the Minnelusa Aquifer. The sources provided in Table 3.4-3 include only one local piece of research. Sources are available that discuss this issue closer to the project area.
- (11) In Section 3.4.3.1.7 ER on hydraulic connection of aquifers, the Applicant provides information that is not local and fails to include studies that are closer to the proposed project area.
- (12) The Applicant assumes that its workforce will be local, thus minimizing housing impacts (Section 4.12.3 ER). To be valid, this assumption should be tied to some sort of research. Is a population that is generally older, majority 12th grade education, and characterized by government employment suited to mining?
- (13) The Applicant ignores critical environmental justice issues in Section 4.13 ER. The Black Hills region is home to the Lakota (western Sioux) people, who have ongoing treaty rights and cultural/historical interests in the area. To the Lakota, the Black Hills are sacred, and mining activity a sacrilege. Mining in the Hills is tantamount to digging 45 up the Vatican or Jerusalem. The Pine Ridge Reservation, home to the Oglala Lakota, is downstream along the Cheyenne River and is already plagued by radioactive water. This is one of the largest reservation populations within the United States. These factors need to be carefully researched and made a critical aspect of the consideration of mining impacts.
- (14) Mitigation of damage to historical and cultural impacts is not discussed in Section 5.8 ER.
- (15) Section 5.8 ER mentions a Memorandum of Agreement with the State of South Dakota. Agreements should also be completed with the seven bands of the Lakota people.
- (16) Section 5.6 ER, which discusses potential air quality impacts, mentions only nonradioactive particulate emissions and fugitive dust. These emissions and dust may also carry radioactivity.
- (17) The Applicant does not mention local first responders in its emergency training plans (Section 5.12 ER).
- (18) Applicant discusses weather without mentioning the presence of dust devils and tornados in the area, which could cause the release of radioactive materials and heavy

metals into the environment (Sections 3.5.2 and 3.5.3. ER, which repeat information, and Section 3.6.2.4 ER). The company also fails to mention heavy snow events, which can impact building integrity.

(19) Discussion of precipitation does not include a 100- or 500-year rain event (Section 3.6.2.3 ER). A single rain event in one of the study years is used to characterize 46 a heavy rainfall, and the Applicant does not discuss what the impacts of such a storm would be on its operations (Section 3.6.3.4 ER). In the Black Hills area, rain often comes in heavy downpours. As an example, in 1972 a flash flood killed more than 200 people on the eastern side of the Black Hills. The Applicant should discuss the impacts of flash flooding and what would be done if a flood moves radioactive and/or toxic materials off the proposed project site or overtops ponds.

(20) There is a similar problem with the discussion of land application in Section 4.4.2 Supplement. Applicant says that precipitation will not wash materials off those areas, but gives no back-up information.

(21) Oglala Lakota College, which has a campus in Rapid City and 10 other campuses on the Pine Ridge Reservation, is not mentioned in the discussion of post-secondary schools (Section 3.10.2.2 ER).

(22) The Applicant's discussion of the area labor force is incomplete. The implications of an older population, the majority of whom have 12 years of education, is not discussed as far as how it relates to the company's labor needs (Section 3.10.3.1).

(23) There is no consideration of the impacts of wildfire or how this danger will be mitigated. A wildfire threatened the Crow Butte ISL facility, and these fires are common in the area.

(24) Food sampling was done on one cow on one date. It is not clear if that "locally grazing cow" was anywhere near the proposed mine site (Section 6.1.11 ER).

(25) The Applicant appears to suggest that it might do deep well disposal into the Minnelusa Aquifer, an important aquifer that is hydrologically linked to the Madison 47 Aquifer, which is the most important aquifer in the region (Section 4.2 Supplement). This information and its ramifications are not included in the Application.

(26) The wastewater to be land applied is characterized as "non hazardous" in Section 4.3 Supplement. This is contrary to research that indicates that land application of uranium mine wastewater may create zones that are highly toxic.

(27) In its supposed discussion of nonradiological impacts (Section 4.14.1 ER), the Applicant doesn't talk about nonradiological impacts. As arsenic and selenium are typically found with uranium in this region, these impacts need to be discussed.

(28) The Applicant repeatedly refers to "standard operating procedures" or "best

management practices” in a safety context (Sections 4.14.11, 5.2.2, 5.12 ER). Critical protections to the public and the environment should not be glossed over in this manner and need to be detailed.

(29) Applicant says that it will keep runoff from disturbed areas from entering local waterways. It refers to documents that “provide confidence” that this will be the case, as well as to unspecified Best Management Practices (Section 4.15.2.3 ER). Given the importance of preventing deterioration of surface water resources in the area, this information should be presented in detail.

(30) The information provided gives no reason to expect that the proposed land application areas are adequate to the proposed rate of application (Section 4.15.2.4.2 ER).

(31) Estimated land application water quality (Table 4.15-1) is based, among other things, on unspecified, undated historical data from Wyoming and Nebraska. This is vague. It is also unclear whether conditions at the other sites are comparable to 48 conditions at the Dewey-Burdock site.

(32) The Applicant repeatedly omits or underestimates the impacts of the approximately 4000 old exploration drill holes located in the proposed mining area. This goes to a basic issue, the ability of surrounding rock layers to contain the in situ leach mining operation. Examples include:

- a. Section 3.3.2.2 ER on the Fuson Member, characterizing it as having “low vertical permeability.”
- b. In the same section, the Skull Creek Shale is similarly characterized.
- c. In its characterization of regional hydrostratigraphic units (Section 3.4.3.1.1 ER et seq.), the Applicant fails to mention the drill holes.
- d. The Applicant fails to mention old drill holes in its discussion of regional hydraulic connection of aquifers (Section 3.4.3.1.7 ER).
- e. In its discussion of the Morrison formation as a confining unit in Section 3.4.3.2 ER, the Applicant states that the formation is a barrier to all deeper aquifers.
- f. The Applicant concludes that the impacts of deep well injection will be “SMALL” [*sic*] “if” aquifers are confined (Section 4.6.2.4 ER). This is a very broad assumption.
- g. In Section 6.2.2.4.1 ER, the Applicant says “vertical excursions are not a primary concern.”
- h. Section 5.2.4 suggests that overlying monitor wells “may be installed.” In Section 5.2.5, it says it “prefers not to use underlying aquifer monitor wells.” The number of old drill holes suggests that monitor wells must be installed in both overlying and underlying aquifers.

(33) The Applicant minimizes the disturbance to land at all stages of the analysis. The applicant states that only 108 acres out of a total proposed action area (PAA) of 10,580 acres would be impacted by mining, facilities, and roads (1.2.3 ER; see also Table 2.11-1 and Section 4.3.1 ER). Their basis for this

number is not provided, but it apparently includes only part of the *initial* mine units, which appear to take up most of a section, or 640 acres (Supplemental Exhibit 3.2-1).

(34) The Applicant also minimizes the disturbance created by its proposed land application of wastewater. It states that a maximum of 355 acres would be used for this purpose (Section 1.2.3 ER). However, maps of the proposed land application area show that application would be done over most of two sections (1,280 acres). This does not include the additional storage, settling, or spare ponds required by this process (Supplemental “Land Application and Irrigation Site Investigation-Test Pit Locations” Map).

(35) In section 3.1.1 ER, the Applicant says both that “there are no recreational lands present” in or within 2 km of the proposed project site *and* that a “recreational use” of the proposed project area is large game hunting – in contiguous sentences.

(36) Table 3.4-3 ER and Section 3.4.3.1.4 ER provide information on the Madison Aquifer that is not site-specific. There is a lot of research on the aquifer that provides relevant information. This is not corrected in the Supplement.

(37) The Applicant mentions exchange between subsurface and surface water in Section 3.4.3.1.10 ER. This is not discussed in the rest of the Application, despite high uranium readings in alluvial aquifers (Section 3.4.3.3.2 ER), and it is unclear whether this type of exchange occurs in the relevant alluvial aquifers. This is important information.

(38) The Applicant took water quality samples directly from uranium ore bodies (Sections 3.4.3.3.2.2 and 3.4.3.3.3.3 ER). This does not provide representative information on water quality in the proposed project area. We are also asked to accept the Applicant’s word that sampling results are representative in Section 6.1.8.4 ER.

(39) Information on area vegetation and stream flows was gathered soon after an extended period of drought. While this is mentioned (Section 3.5.5.1.1 ER, quoting Powertech’s Project Manager), the implications are not considered in the ER.

(40) The applicant relies on a survey for black-footed ferrets that was completed in 1977. This was during a period of time when the ferret was believed to be extinct in South Dakota (Section 3.5.5.4.1 ER). Since that time, populations have rebounded.

(41) The representativeness of meteorological information taken on the site was determined using data from Chadron, NE, a site that is 53 miles away and has very different topography (Section 3.6.1 ER).

(42) The Applicant also uses information from Oral, SD, in its weather analysis. Predominant wind directions on the Oral site are different from the directions measured on the proposed project site (Sections 3.6.3.2 and 3.6.2.4 ER).

(43) It is unclear how a continental measure of the radiation impacts is relevant to a local measure of radiation exposure. The numbers shown in Table 3.11-1 ER are suspect, as the project area is higher altitude than where most of the continent's population is located and contains over 100 old uranium mines.

(44) In Section 4.4.3.3 ER, the Applicant notes that the Nuclear Regulatory Commission concludes that a transportation accident involving a truck carrying yellowcake is 11% per year per uranium extraction facility. This means that the probability is 100% over ten years. The Applicant fails to discuss the implications of this probable accident.

(45) The Applicant uses the National Mining Association, a trade group that promotes mining, as the source for sections of its ER. These include Sections 4.5.2 – 4.5.5, 4.6.2.2, and 4.6.2.8.1 ER, which include the applicant's discussion of excursions, a critical risk factor from ISL mines. These sections are overly vague, as they are designed as a general description of a mining operation. 50

(46) The Applicant analyzes (vaguely) the potential impacts of sedimentation from its proposed project in the context of the watershed of the Angostura Reservoir (Section 4.6.1.1 ER). This is not the appropriate unit of analysis. The analysis needs to be specific to the area of its project.

(47) Because the Applicant says that its tests showed no percolation beyond the base of the soil profile, it "assumes" that there will be no lateral or vertical movement of water that could impact groundwater under the land application sites (Section 4.6.2.3 ER). This ignores the presence of alluvial aquifers, as well as being poor science.

(48) It is unclear how a phased approach to well field construction will minimize groundwater impacts, as the company states in Section 4.6.2.5 ER.

(49) In Section 4.6.2.6.1 ER, which discusses drawdown, the Applicant makes at least three assumptions that are not appropriate for the proposed project area: that the aquifer is homogeneous, that the aquifer is confined; and that there is no recharge (Section 4.6.2.6.1 ER).

(50) The Applicant opines that the Dewey Fault Zone contains the project area's aquifers (Section 4.6.2.6.1 ER). Fault Zones are fractures in the earth that may conduct fluids among aquifers or may move either horizontally or vertically.

(51) Drawdown impact estimates are based on only a few test wells (Sections 4.6.2.6.2 and 4.6.2.6.3 ER). It is unclear whether these tests are representative of the entire proposed project area.

(52) The Applicant assumes that there will be no physical impacts on Cottonwood Gallery and Ponderosa Pine vegetative communities (Section 4.7 ER). This is impossible, given the extensive disturbance of project operations, as well as the certainty of above-ground spills and leaks.

(53) The Applicant speculates that land application will actually “enhance” habitat (Section 4.7 ER). This contradicts research indicating that land application from in situ mines can concentrate contaminants to toxic levels.

(54) In Section 4.12, the Applicant makes a number of assumptions about local socioeconomic impacts of the project that are not supported by any evidence, and that there is reason to believe are untrue. Its data about local socioeconomic impacts should be calculated to reflect the situation on the ground. These include: (a) “[N]ew workers living within Custer and Fall River Counties would spend their income locally.” People from rural counties in the area do substantial shopping and other economic activity in Rapid City. (b) There would be \$45.8 million in non-payroll capital expenditures. The nature of these expenditures is unclear. For example, contractors Knight Piésold are from Denver. Most equipment, including expensive items like drill rigs and mining and transportation equipment, are not manufactured locally, so the financial benefits of these purchases would not be local.

(55) In calculating production releases of radon, the Applicant includes “small unavoidable leaks in well field and ion exchange equipment” (Section 4.14.2.3.4 ER). The definition of “small” is open to interpretation. However, most in situ operations include larger spills. This is well-known and should be included in this analysis.

(56) Atmospheric releases of radon are calculated using 1978 data from Casper, WY, which may not be representative of current or local conditions (Section 4.14.2.3.12 ER).

(57) The Applicant assumes that radionuclide concentrations in *soil* will be “the most important pathways to flora and fauna exposure” (Section 4.14.2.4 ER). It is not clear whether this includes land application, which can concentrate contaminants in both flora and fauna.

(58) There is contradictory information on the Applicant’s plan for deep well disposal. It both shows on-site options and says that there are suitable zones for disposal in Wyoming and Nebraska. This section is also very vague in its discussion of impacts from deep well disposal (Section 4.15.2.4.1 ER),

(59) The Applicant states “Considering the distance between the existing projects and the proposed project and the almost half a century since the previous uranium development in the area, cumulative environmental impacts are considered to be small to negligible” (Section 4.16.1 ER). This statement fails to consider the 169 known old uranium mines and prospects in the southern Black Hills. There are also old surface and underground mines directly on the proposed project area.

(60) In its calculations of existing gamma count rates in the proposed mining area, the Applicant removes what it determines to be “outliers,” including 9% of the readings in the old surface mine areas (Section 6.1.2.2.1 ER). Similarly, 16% of the first 80 readings on Radium-226 and 20% of those done in the surface mine area were rejected as “outliers.” This depresses the area’s readings and minimizes the existing disturbance. If all readings were included, it might become clear that the area should not be disturbed further.

(61) The applicant sampled stream sediments in the upstream side of dry surface impoundments (Section 6.1.4.1.2 ER). Stream sediments normally collect at the downstream side of an impoundment and should also be sampled there.

(62) The criteria for selection of groundwater wells for water sampling are listed, but not operationalized. The Applicant says the sites were “representative” (Section 6.1.8 ER), but that cannot be determined without further information.

(63) The comparison of historic and recent groundwater quality does not include radionuclides (Section 6.1.8.3 ER). This is important, given the fact that these are major criteria of concern. Increased radionuclide contamination in wells could indicate vertical contamination through old drill holes. The Applicant then extends these few samples (that do not include criteria of concern) to say that the water parameters in the tested wells have been consistent over time. And then it goes farther to say that the area’s water chemistry is stable (Page 6-82 ER). There are a lot of assumptions in these leaps of faith. This research should be re-done before a permit is considered further.

(64) Many aspects of the geology of the proposed project area are stated by Applicant to be UNKNOWNs. Their discussion on this topic repeatedly slants the information in the direction of simplicity and safety, while a number of authors point out the complexity of the geology of the Black Hills. As 52 noted above, the presence of over 4,000 old drill holes is often ignored. The discussion of breccia pipes talks about the unlikely development of “caverns” – which are different from “breccia pipes” (Section 2.3.1 Supplement).

(65) Breccia pipes in this region are known to be as much as 1300 feet high and several hundred feet across. If they are associated with the Dewey Fault Zone, as the Applicant states (Section 2.3.1 Supplement), then they are very close to the proposed project area. The maps submitted with the Application

do not show any drilling that may have identified (or created) problems in the area between the proposed project and the Dewey Fault Zone.

(66) Section 3.2 Supplement raises a new issue that is not analyzed in other parts of the Application. This is the Applicant's intention to disturb the old open pit uranium mines on its proposed mining site. It first says that it doesn't plan to operate through the mine wastes, then says that it plans to place well fields in that area. The full implications of mining in the same location as the old uranium mines need to be discussed, including air and water quality, human exposure, waste issues, cumulative impacts, and so forth.

(67) In Section 6.2 Supplement, the company begins by saying that vehicular traffic is a "potential source of dust." This reflects ignorance, a failure to analyze and describe the nature of Western South Dakota's unpaved roads or unimproved tracks in the summer. There will be dust.

(68) The "potential source[s] of dust" include 107 vehicles during initial construction, 109 during operations, and 41 during decommissioning. Clearly, there will be a lot of dust. A photo of another ISL mine in the area shows barren ground, stripped of vegetation. This suggests that there will be a lot of dust from operating areas. Due to the spacing of wellheads, it is questionable whether "heavy duty watering trucks" will be able to adequately wet down well fields."

*See* Petitioners' Request at 41-52.

In the subsections below, Powertech will categorize these claims into groups that reflect the same generic issue and, where necessary, will specifically address each claim.

**a. Claims 1-2, 4-8, 10-11, 25, 27, 32, 36-38, 45, 47-50, 58, & 62-63: Groundwater Quality**

Petitioners Claims listed above allege that Powertech's license application violates 10 C.F.R. §§ 51.45 (c & e) and 10 C.F.R. Part 40, Appendix A, Criterion 5(B)(5) with respect to information submitted regarding groundwater at the proposed Dewey-Burdock ISR site. For example, these Claims allege that Powertech's license application does not provide adequate information regarding baseline water quality and recovery solution data, groundwater consumption estimates, site aquifers, subsurface conditions and impacts, deep-well disposal impacts, and radiological and non-radiological impacts. These Claims do not support an

admissible contention as they have no basis in law and are discussed in Powertech's environmental report.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as groundwater are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the accompanying technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Sections 2.7.2(4) and 2.7.3(4) specifically addresses Petitioners' Claims 1 and 2 regarding pre-operational baseline water quality data. Sections 4.6.2.2 through 4.6.2.7 and technical report sections 2.7.2.2.16 and 5.7.1.3 address Petitioners' Claims 4 through 8 regarding potential groundwater impacts. Further, Petitioners' statements in these claims regarding the need for a discussion of potential groundwater quality impacts in accordance with Appendix A, Criterion 5(B)(5) are without merit. As stated above, Petitioners do not point to any portion of Criterion 5(B)(5) that requires a license applicant submit information in its license application in the manner prescribed by them.<sup>17</sup> See *Diablo Canyon*, LBP-02-23, 56 NRC at 419. Since Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, they do not support an admissible contention.

**b. Claims 1, 8-9, 20, 26-27, 30-31, 37, 39, 46, 61: Surface Water Quality**

Petitioners' Claims listed above allege that Powertech's license application violates 10 C.F.R. 51.45 and/or 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5) with respect to potential surface water impacts at the proposed Dewey-Burdock ISR site. These Claims state that

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<sup>17</sup> Indeed, Criterion 5(B)(5), which currently NRC applies to groundwater restoration through license conditions, has little or nothing to do with assessing determining pre-operational baseline water quality, lixiviant chemistry, waste content or any other issues raised by Petitioners in these Claims.

Powertech failed to supply adequate information regarding surface water quality, erosion or run-off to surface water sources, land application and its relation to surface water run-off, subsurface and surface water connection, and sedimentation. Petitioners' Request at 41-51. None of these claims support an admissible contention as they do not have a basis in law and are discussed in Powertech's license application.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as surface water are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the accompanying technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Claims 8 and 9 are addressed by Powertech in Section 3.4.1.2 of the environmental report, and Claims 26-27 are discussed in Sections 6-9 of the technical report. Claims 30-31 are also addressed in Sections 4 and 7 and associated tables and figures in Powertech's technical report and associated figures and tables, and the remainder of the Claims are merely opinions with no reference to any specific legal or factual issue and are not supported by an identified expert testimony. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419; *see also Fansteel*, 58 NRC at 203. Petitioners also do not and cannot point to any portion of Criterion 5(B)(5) that requires a license applicant submit information in its license application in the manner prescribed by them. Indeed, as noted above, Criterion 5(B)(5) has little or nothing to do with the portions of Powertech's license application raised by Petitioners in these Claims on waste disposal. Since Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, they do not support an admissible contention.

**c. Claims 3, 20, 25-26, 30-31, 34, 47, 53, & 57-58: Waste Disposal**

Petitioners' Claim listed above allege that Powertech's license application violates 10 C.F.R. 51.45 and/or 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5) with respect to potential impacts from waste disposal at the proposed Dewey-Burdock ISR site. These Claims state that Powertech's license application violates these regulations by failing to provide an adequate discussion of chemical composition of liquid wastes, land application, wastewater composition, soil profiles, and potential impacts to flora and fauna. Petitioners Request at 42-51. None of these claims support an admissible contention as they do not have a basis in law and are discussed in Powertech's license application.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as waste disposal are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the accompanying technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Claims 25 and 26 are addressed in Sections 4.6.2.2 through 4.6.2.9 of Powertech's environmental report and Sections 2 and 5 of the technical report. Further, Claims 30 and 31 are addressed in Section 4 of the technical report and associated tables and figures, and the remainder of the Claims is merely opinion and is not supported by an identified expert testimony. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419; *see also Fansteel*, 58 NRC at 203. As noted above, Petitioners also do not and cannot point to any portion of Criterion 5(B)(5) that requires a license applicant submit information in its license application in the manner prescribed by them. Since

Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, they do not support an admissible contention.

**d. Claims 7-8, 10-11, 32, 36, 50 & 64-65: Geology and Hydrology**

Petitioners' Claims listed above allege that Powertech's license application violates 10 C.F.R. 51.45 and/or 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5) with respect to site geology and hydrology at the proposed Dewey-Burdock ISR site. These Claims state that Powertech's license application violates these regulations by failing to provide an adequate discussion of geologic formations, porosity, hydraulic connection of aquifers, and historic drill holes and their potential effects on proposed site ISR operations. None of these claims support an admissible contention as they do not have a basis in law and are discussed in Powertech's license application.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as geology and hydrology are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the accompanying technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Claims 10 and 11 are addressed by Powertech in Sections 2 and 6 of the technical report, and the remainder of the Claims are merely opinions and are not supported by an identified expert testimony. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419; *see also Fansteel*, 58 NRC at 203. Petitioners also do not and cannot point to any portion of Criterion 5(B)(5) that requires a license applicant submit information in its license application in the manner prescribed by them. Indeed, as noted above, Criterion 5(B)(5) has little or nothing to do with the portions of

Powertech’s license application raised by Petitioners in these Claims on waste disposal. Since Petitioners’ Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, they do not support an admissible contention.

**e. Claims 12, 21-22, & 54: Socioeconomics and Cost-Benefits**

Petitioners Claims 12, 21-22, and 54 allege that Powertech’s analysis of socioeconomics and cost-benefits in its license application violates Part 51.45, because it does not include assessments of certain items in its environmental report. Petitioners’ Request at 44, 46, and 50. These Claims do not support an admissible contention as they do not have a basis in law. Part 51.45 does not prescribe to a license applicant the manner in which issues such as socioeconomic and cost-benefits are to be assessed in a given license application. Since Petitioners’ Claims attempt to dictate how Powertech should assess these issues does not find support in the regulations they cite, which constitutes a failure to identify a specific issue of law that is in error, the Claims do not support an admissible contention. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419.

**f. Claim 13: Environmental Justice**

Petitioners’ Claim 13 alleges that Powertech’s license application “ignores critical environmental justice issues...” Petitioners’ Request at 44. This Claim does not support an admissible contention as it does not have a basis in law. Petitioners do not cite to any portion of Part 51.45 or Part 40, Appendix A that specifically requires Powertech to address potential environmental justice issues associated with the proposed Dewey-Burdock ISR project. Further, Part 51.45 does not prescribe any form or specificity requirements for how a license applicant must address a particular issue such as environmental justice. Specifically, Part 40, Appendix A does not have any provisions that apply to environmental justice, and Part 51.45 only addresses

the items that should be addressed in an environmental report. Thus, without more, these Claims do not support an admissible contention and should be rejected.

**g. Claims 16, 18, 55-56, & 67-68: Air Quality**

Petitioners Claims listed above allege that Powertech's license application violates 10 C.F.R. 51.45 and/or 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5) with respect to air quality at the proposed Dewey-Burdock ISR site. These Claims state that Powertech's license application violates these regulations by failing to provide an adequate discussion of radiological air emissions, effects of weather on such emissions, and dust releases. Petitioners' Claims at 45-52. None of these Claims support an admissible contention as they do not have a basis in law and are discussed in Powertech's license application.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as groundwater are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Claim 16 is addressed in Section 4.8.2 of the environmental report, and Claims 55-56 are addressed in Section 4 of the environmental report. Claims 67-68 are addressed in Section 5.6 and the environmental supplement Section 6.2. Since Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, which constitutes a failure to allege an error of law, they do not support an admissible contention. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419.

**h. Claims 23, 33-34, 39, 52-53, & 57: Land and Surface Use**

Petitioners' Claims listed above allege that Powertech's license application violates 10 C.F.R. 51.45 and/or 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5) with respect to land and surface uses at the proposed Dewey-Burdock ISR site. These Claims state that Powertech's license application violates these regulations by failing to provide an adequate discussion of potential impacts from wildfires, land disturbance, land application, vegetation, stream flows, and soil quality. Petitioners' Request at 46-51. None of these Claims support an admissible contention as they do not have a basis in law and are discussed in Powertech's license application.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as groundwater are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Claims 34 and 53 on land application are addressed in Sections 3 and 4 of the technical report, and Claims 33 and 52 are addressed in Section 4.7 of the environmental report. In addition, many aspects of the above-listed Claims are nothing more than comments that do not even offer an allegation. Since Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, which constitutes a failure to allege an error of law and, accordingly, they do not support an admissible contention. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419.

**i. Claims 24, 35, 43-44, 56-57, 60, & 63: Radiological Issues**

Petitioners' Claims listed above allege that Powertech's license application violates 10 C.F.R. 51.45 and/or 10 C.F.R Part 40, Appendix A, Criterion 5(B)(5) with respect to potential radiological emissions and/or releases at the proposed Dewey-Burdock ISR site. These Claims state that Powertech's license application violates these regulations by failing to provide an adequate discussion of food sampling, location of recreational areas, potential radiation emissions, transportation accident scenarios, deep well disposal, and groundwater quality with respect to radionuclide content. Petitioners' Request at 46-51. None of these Claims support an admissible contention as they do not have a basis in law and are discussed in Powertech's license application.

As stated throughout this Response, Part 51.45 does not prescribe to a license applicant the manner in which issues such as groundwater are to be assessed in a given license application. Part 51.45 merely requires that an applicant address certain issues in its environmental report and, because it is inextricably linked to the license application, the technical report. Based on the language of Petitioners' Claims, each item is assessed in Powertech's license application in compliance with Part 51.45. For example, Claim 57 is addressed by Powertech in Sections 4.14.2.1-4.14.2.3 and 4.14.3 of the environmental report, and Claim 56 was addressed in Section 4.14.2.3.12 of the environmental report. In addition, many aspects of these Claims are mere comments and do not even offer an allegation, much less a credible one. Thus, since Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, they do not support an admissible contention.

**j. Claims 17, 28, 44-45: Safety Issues**

Petitioners' Claims 17, 28, and 44-45 state that Powertech's license application fails to provide for a proper analysis of specific safety issues such as the mentioning of local emergency first responders, references to "standard operating procedures" or "best management practices" and the use of specific information from NRC and National Mining Association (NMA) documents. Petitioners' Request at 45, 47, and 49. These Claims allege that Powertech's license application is overly vague in aspects related to potential accidents and to excursions. None of these Claims are sufficient to support an admissible contention, as they do not have a basis in law. Part 51.45 does not prescribe the manner in which a license applicant should address safety issues associated with a proposed ISR project. Since Petitioners' Claims attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite, these Claims are not adequate to support an admissible contention.

**k. Claims 14-15: Historic and Cultural Resources**

Petitioners' Claims 14-15 relate to potential impacts to historic and cultural resources and to Powertech's analysis of mitigation measures for such potential impacts, including memoranda of agreement to mitigate such impacts. Petitioners' Request at 45. These Claims do not support an admissible contention, as they do not have a basis in law. Petitioners do not offer any discussion of how Parts 51.45 and 40, Appendix A require Powertech to sign MOAs with the Lakota people or why mitigation of potential impacts to historic and cultural resources should be assessed in a manner that is different from the assessment in Powertech's license application. Thus, since Petitioners' attempt to dictate how Powertech should assess these issues is not supported by the regulations they cite these Claims do not support an admissible contention.

**l. Claim 40: Ecological Issues**

Petitioners' Claim 40 states that Powertech has violated Part 51.45 and Part 40, Appendix A by relying on a study for black-footed ferrets from 1977 and that such study should not be relied upon. Petitioners' Request at 49. This Claim does not support an admissible contention as it does not actually allege that Powertech's license application is inadequate. Thus, it does not raise a genuine dispute with the applicant on a material issue of law or fact and should be rejected. *See* 10 C.F.R. 2.309(f)(1)(vi). Further, the Claim has no basis in law, as Petitioners have not offered any argument as to what provisions of Part 51.45 and Part 40, Appendix A apply to ecological issues and what, if any, requirements are present to mandate that Powertech add to or revise its license application. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419. Without more, this Claim does not support an admissible contention.

**m. Claims 41-42: Climate and Meteorology**

Petitioners' Claims 41-42 state that Powertech's meteorological data in its license application improperly relies on data from areas where wind directions are not in line with those at the proposed Dewey-Burdock ISR site. Petitioners' Request at 49. These Claims do not support an admissible contention, as they do not have a basis in law. Petitioners do not offer any explanation as to what portions of Parts 51.45 or 40, Appendix A that require Powertech to address meteorological issues in the manner they prescribe. Petitioners also do not reference any aspect of NRC guidance that demonstrates failure by Powertech to satisfy appropriate NRC requirements. Thus, these Claims represent nothing more than conjecture and, as such, do not support an admissible contention. The remainder of the Claims is merely opinion and is not supported by an identified expert testimony. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419.

**n. Claims 59 & 66: Cumulative Impacts**

Petitioners' Claims 59 and 66 state that Powertech's license application violates Part 51.45, because it does not include assessments of past uranium mining operations and merely provides information about disturbing some old uranium mine wastes. Petitioners' Request at 50-51. These Claims do not support an admissible contention because they do not have a basis in law. "NEPA does not prohibit approval of projects with negative cumulative effects; it only requires that the [agency] consider and disclose such effects." *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350-351 (1989). Part 51.45 does not impose any specific requirements for how a license applicant must address cumulative impacts in its license application. Since Petitioners' Claims rest on a potential violation of Part 51.45, these Claims cannot support an admissible contention.

**ii. Alleged Violations of 10 C.F.R. § 40.9 & Claims of Misrepresentation**

As in Section 9(i) above, Powertech believes it is important to provide the Licensing Board with a short reiteration of the applicability and relevance of 10 C.F.R. § 40.9 to the Dewey-Burdock license application, as discussed above. Part 40.9 provides parameters for license applicants to submit applications with information that is complete and accurate regarding items that are to be assessed by NRC Staff. This regulation, however, does not impose a roster of items that a license applicant is required to address in its license application. Indeed, this regulation merely requires that a license applicant provide accurate information and that aspects of a proposed project are not intentionally misrepresented. Thus, any claim by Petitioners that Powertech has violated Part 40.9 due to failure to discuss specific issues is not sufficient to support an admissible contention.

With that said, Powertech has identified each of Petitioners' claims in Contention I that would fall within the parameters of an alleged violation of 10 C.F.R. § 51.45 and/or 10 C.F.R. Part 40, Appendix A. These claims are copied in order of presentation for the Board's convenience:

"The following are examples of misrepresentation of information:

(69) In Section 1.1 ER, the Applicant provides misleading information by focusing on the greenhouse gases emitted by nuclear power plants, without considering the entire nuclear chain. All stages of that chain *other than* power plants emit greenhouses gases, including exploration, mining, milling, enrichment, construction, decommissioning, transportation, and waste disposal. The failure to clearly enunciate the full impact of nuclear activities in this context is misleading.

(70) Table 2.11-1 purports to compare project alternatives. It states that the proposed action would have no surface water impacts and "slight consumption of ore zone groundwater." Thousands of millions of gallons of ground water would not be considered "slight consumption" by most people. Saying there will be no surface water impacts ignores construction and transportation impacts, as well as the history of above-ground spills and leaks from in situ 53 leach operations.

(71) Table 2.11-1 says that there will be no historical and cultural impacts. Section 5.8 says that there "may be" archeological sites present. These statements are contradicted by the company's statement that there are at least 190 archeological sites in the proposed project area, or one site per 8.1 acres – and that Applicant notes that "the sheer volume of sites documented in the area is noteworthy" (Sections 3.8.1 and 4.10 ER). This implies that the Applicant is not adequately prepared to deal with these sites, as it is apparently not fully in a mindset that accepts and expects their presence.

(72) Under "Socioeconomic Impacts," Table 2.11-1 lists only positive impacts – and only economic impacts – for the proposed project. It lists only negative – and only economic impacts for the no-action alternative. There is a similar problem in Section 4.1. *Socioeconomic* impacts are not just economic. Mining projects have a history of both positive and negative social and economic impacts, known as the boom-and-bust cycle.

(73) In section 3.1.1.1 ER, the Applicant says, "The human influence on the area is minor." Some would consider the presence of 340 acres of unreclaimed open pit uranium mines (Table 3.3-1) to be more than a "minor" influence. The

presence of grazing, wells, roads, and a railroad are also a result of human activity and changed the character of the area.

(74) In Section 3.6.4 ER, the Applicant asserts “ISL facilities do not significantly affect air quality.” It provides no support for this assertion. In fact, in the Supplement (Section 6.2), it says that 107 vehicles will be involved in initial construction (not counting ongoing construction), 109 will be involved in operations, and 41 will be involved in decommissioning. It does not mention the air quality impacts of blowing dust that may be contaminated with materials generated by the mining.

(75) The Applicant says that large mammals will be disturbed by in situ leach mining in a manner “similar” to that already existing in the area (Section 4.7.2.1 ER). This minimizes the fact that the proposed operation is a major industrial operation that would be added to a relatively quiet and open landscape.

(76) In Section 4.7.5.2 ER, the Applicant suggests that the intrusion of an industrial operation about half a mile from an active bald eagle nest will not disturb the nest. It implies that burying pipelines, which involves heavy equipment operation, will minimize impacts to the birds. It says that center-pivot irrigation -- which disturbs the landscape, involves human activity and noise, and may contaminate eagles’ food sources -- can be minimized so as to not disturb nesting birds. These statements are not credible.

(77) The Applicant also states that the bald eagle nest site is “at least 1.0 mile from the nearest planned facility” (Section 4.7.3.2 ER). This is contradicted by Plate 2.8-3.

(78) In its discussion of the cumulative impacts of other uranium projects, the Applicant mentions only surface mining (Section 4.16.1 ER). The immediate area of the proposed mine also has a history of underground mining. The 54 discussion mentions Wyoming and Nebraska, which have a history of in situ leach mining. The company’s principals are clearly familiar with this due to other mentions of the Crow Butte Mine in Nebraska and due to their employment at ISL mines in Wyoming. The failure to provide this information minimizes the cumulative impacts of uranium activities in the region, which are substantial.

(79) In Section 5.1.1 Supplement, the company begins by stating that it will replace existing water wells or secure other water if a well’s use is diminished. As proof, it provides a copy of its lease. This lease only protects lessors from problems with water quality and availability, not others who might be impacted.

(80) The failure to fully consider the No Action Alternative is part of a larger

pattern. This pattern begins when the Applicant states that this Alternative is simply “a baseline from which to compare the potential impacts of the other action alternatives.” (Section 2.1 ER). It is, in other words, given no real consideration. Real consideration is required.

(81) Other problems with the Cost-Benefit Analysis include that the Applicant assumes that the project will include “limited surface disturbance, negligible radiological impacts” and “insignificant changes in the overall groundwater quality” *before* it begins its cost-benefit analysis (Section 7.2.1.2 ER). This is contrary to proper analytical methods, in which one begins without major assumptions that bias the analysis.

(82) The project is considered as one unit of analysis (Section 7.2.2.1 ER). This is inappropriate. There will be distinct costs and benefits from each aspect of the project. A processing facility has different impacts than a well field. A road has different impacts than a pipeline. Center-pivot irrigation has different costs and benefits than deep well disposal. And so forth.

(83) In the Cost-Benefit Analysis Section, the Applicant states that the project will last 7 years, rather than the 8 years used elsewhere. And, of course, restoration times have been under-estimated at other ISL mines. So, based on that experience, it is optimistic to expect project completion in either 7 or 8 years. A longer project lifetime would expand both the costs and the benefits of the proposed project.

(84) In the consideration of potential socioeconomic impacts (Section 4.12 ER), the Applicant says that its project will employ as many as 200 people in one year. In the Cost-Benefit Analysis, this number is 86 (Section 7.3.2 ER). There is a substantial difference in both the costs and benefits of 200 employees and 86 employees. The analysis should provide a realistic number based on solid data, rather than wildly different numbers.

(85) The Applicant excludes federal taxes from its consideration of costs and benefits (Section 7.3.3 ER). It does not explain how it calculates the figures for its tax contributions in Table 7.3-3. Given the fact that the Applicant reports only the economic benefits of the proposed project, it is possible that the tax contribution numbers are inflated.

(86) The consideration of potential value-added benefits does not tell what those 55 benefits might be – or what the *costs* of achieving them might be (Section 7.3.4 ER). It is likely that most value-added benefits of operation will accrue to the Applicant in the form of revenue from yellowcake production. This should be clarified.

(87) The section on housing shortages does not discuss housing shortages (Section 7.4.1 ER). Housing shortages have been a critical problem in boom-and-bust economies.

(88) The information on school impacts shows no understanding of the impacts of an increased number of students on a school district (Section 7.4.1.2 ER). While student-teacher ratios may be low in area schools, that does not mean that classrooms have excess capacity, administrators are under-worked, there is excess water and sewer capacity, gyms are large enough, or there are enough janitors or buses. The Applicant should research and consider all factors related to school growth.

(89) In the groundwater impacts section, the Applicant states that its mining would represent a “temporary commitment of water resources.” This could not be further from the truth. The applicant says that its operations will consume (i.e., use up) as many as 4,654 Million gallons of water (Table 4.6-2 and Section 4.2.1.1 Supplement). The benefits of this water to the Applicant should be monetized. Water for the proposed project should also be monetized not only in terms of current use, but also of opportunity costs.

(90) Table 7.5-1 does not reflect a realistic Cost-Benefit Analysis, all likely variables related to all alternatives must be considered. To the extent possible, they must be monetized to allow direct comparison of costs and benefits.”

*See* Petitioners’ Request at 52-55.

In the subsections below, Powertech will categorize these claims into groups that reflect the same generic issue and, where necessary, will specifically address each claim.

**a. Claims 70, 79, & 89: Groundwater Quality**

Petitioners’ Claims 70, 79 and 89 offer three statements regarding information offered by Powertech in its Dewey-Burdock license application pertaining to potential impacts to groundwater. Petitioners claim that Powertech’s license application misrepresents information in violation of 10 C.F.R. § 40.9 in its discussion of groundwater consumption and replacement of water wells at or near the proposed site and that the license application should “monetize” the benefits of groundwater used for the proposed project. Petitioners’ Request at 52, 54-55. These Claims do not support an admissible contention, as they do not have a basis in law. As stated

above, 10 C.F.R. § 40.9 addresses requirements that a license applicant submit information that is complete and accurate in all material aspects, but it does not create an independent obligation for a license applicant to submit particular types of information. Petitioners do not cite to any portion of Part 40.9 that mandates that Powertech submit a “monetized” assessment of groundwater consumption nor do they point to any regulatory requirements that mandate the type of language to be used when discussing potential impacts or the manner in which parts of its process operation are described. Petitioners do not allege any deficiencies or errors in the application with a significant link between the claimed deficiency and either public health and safety or the environment. *See Diablo Canyon*, LBP-02-23, 56 NRC at 419. As a result, this portion of Contention I should not be admitted.

**b. Claim 70: Surface Water**

Petitioners’ Claim 70 also raises a concern regarding potential surface water impacts. Petitioners state that Powertech should not state in its application that “there will be no surface water impacts” due to the history of ISR operations and activities that will take place during construction and operation of the propose Dewey-Burdock ISR site. Petitioners’ Request at 52-53. This Claim cannot support an admissible contention, as it does not point to any aspect of Parts 40.9 (a) or (b) that requires Powertech to state with specificity that there “will be” impacts to surface water. Further, Petitioners cannot claim that Powertech has not assessed potential surface water impacts or has not provided the proper information for Commission review of its license application, because Sections 4.6.1, 4.6.1.1, and 4.6.1.2 specifically discuss potential impacts to surface water from the proposed Dewey-Burdock ISR site, as well as proposed mitigation measures to minimize or eliminate any such impacts. Thus, this Claim does not support an admissible contention and should be rejected.

**c. Claims 69 & 74: Air Quality**

Petitioners' Claims 69 and 74 state that Powertech has violated 10 C.F.R. §§ 40.9(a & b) by providing "misleading information by focusing on greenhouse gases emitted by nuclear power plants, without considering the entire nuclear chain" and by stating that ISR operations "do not significantly affect air quality...." Petitioners Request at 52-53. This does not support an admissible contention, because Petitioners do not point to any provisions of Part 40.9 that mandate that Powertech submit a particular type of information or that any aspect of its license application is intentionally misrepresenting its plans for the proposed Dewey-Burdock ISR site. Petitioners Claim 69 is not germane to this proceeding, as it is essentially asking Powertech to assess air quality impacts for the entire nuclear fuel cycle, which is well beyond the scope of this proceeding as described in the above-mentioned January 5, 2010 Federal Register notice. Since the proposed Dewey-Burdock is a "front-end" fuel cycle facility and does not engage in any other fuel cycle activities, Petitioners Claim 69 is irrelevant. *See* 10 C.F.R. § 2.309(f)(1)(iii). Further, Petitioners cannot allege that Powertech has not assessed potential air quality impacts associated with the proposed site, as Section 4.8 of its environmental report specifically discusses potential air quality impacts associated with the proposed Dewey-Burdock ISR site, as well as proposed mitigation measures to minimize or eliminate any such impacts. Thus, these Claims cannot support an admissible contention.

**d. Claims 72, 81-88, & 90: Socioeconomics and Cost-Benefits**

Petitioners' Claims 72, 81-88, and 90 state that Powertech has violated 10 C.F.R. §§ 40.9(a & b) by failing to properly assess potential socioeconomic impacts and by not providing a proper cost-benefit analysis. Petitioners' Request at 53-55. Each of Petitioners' Claims here suggest that Powertech's proposed Dewey-Burdock ISR project will not follow the projected

timelines and will not result in the analyzed costs and benefits associated with increased employment, tax revenue, and other items. *Id.* These Claims do not support an admissible contention, as they do not have a basis in law. Petitioners do not point to any specific sections of Part 40.9 that require Powertech to conduct an analysis of potential socioeconomic impacts based on some immutable timeline, nor do Petitioners demonstrate how Part 40.9 requires Powertech to conduct a cost-benefit analysis in the manner suggested in Claims 81-88 and 90. Further, Powertech provided a cost-benefit analysis in Section 7.1 of the environmental report pursuant to an IMPLAN approach that is widely accepted in the uranium recovery industry and at NRC, as well as additional “key assumptions” in Section 7.2.2. Thus, without more, these Claims do not support an admissible contention and should be rejected.

**e. Claims 73 & 75-76: Land and Surface Uses**

Petitioners’ Claims 73 and 75-76 state that Powertech’s proposed Dewey-Burdock ISR site will result in potential impacts to aspects of local ecology, including impacts from historic uranium mining activities and from the proposed project. Petitioners’ Request at 53. Petitioners allege that the proposed project will disturb an “active bald eagle nest” and will be a “major industrial operation” that will disturb “a relatively quiet and open landscape. *Id.* These Claims do not support an admissible contention as they do not have a basis in law. Petitioners do not offer any explanation as to how Part 40.9 applies to these Claims or how the regulation mandates requirements that additional information or assessment is required in Powertech’s license application. Further, Petitioners do not even offer an allegation as to what aspects of Powertech’s license application requires revisions or re-assessment; but rather Petitioners simply state that Powertech’s statements “are not credible.” Petitioners’ Request at 53. Without more, these Claims do not support an admissible contention and should be rejected.

**f. Claim 71: Historic and Cultural Resources**

Petitioners' Claim 71 states that Powertech's license application asserts that there will be no impacts to historic and cultural resources from the proposed Dewey-Burdock ISR site and that statements made in the license application contradict such an assertion. Petitioners' Request at 53. Petitioners' allege that, based on this factor, Powertech "is not adequately prepared to deal with these [archaeological] sites, as it is apparently not fully in a mindset that accepts and expects their presence." *Id.* This Claim does not support an admissible contention, because it does not have a basis in law. Petitioners do not point to any aspect of Part 40.9 that requires Powertech to submit any additional information above and beyond that already submitted to NRC in its license application, which contains substantial and comprehensive cultural resources reports. Petitioners do not even mention the detailed archaeological and other historic and cultural resource reports and consultations completed and engaged in by Powertech as part of its license application. Indeed, Petitioners even recognize in their Request that Powertech acknowledges the presence of sites of historic and/or cultural significance, and Section 3.8 of the environmental report and Section 7.2.4 of the technical report specifically discusses the manner in which Powertech will address currently identified sites and, in the event that additional sites are located, how they will be addressed, as historic preservation is not a static, but rather an ongoing responsibility of a licensee.<sup>18</sup> Thus, without more, this Claim does not support an admissible contention and should be rejected.

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<sup>18</sup> Petitioners' Claim 71 is incorrect with respect to the "density" of identified historic or cultural sites at the proposed Dewey-Burdock ISR site. By taking 190 identified sites in the project area totaling 10,580 acres, the result is only one identified site per fifty five acres. Thus, it is important for the Licensing Board to note that the proposed site is large in area and the "density" of identified sites is much less than that claimed by Petitioners.

**g. Claims 75-77: Ecological Issues**

Petitioners Claims' 75-77 state that Powertech's license application violates Part 40.9 by not providing adequate information regarding potential impacts to ecological aspects at or near the proposed Dewey-Burdock site. These Claims allege *inter alia* that the proposed Dewey-Burdock ISR site will result in potential impacts to a bald eagle nest and that the license application does not properly address potential ecological impacts. Petitioners' Request at 53. These Claims do not support an admissible contention, because they do not have a basis in law. Petitioners do not cite to any provisions of Part 40.9 that require Powertech to provide any additional information than that which has been provided in its license application nor the mitigation measures regarding raptors discussed in the environmental report. Therefore, without more, these Claims do not support an admissible contention.

**h. Claims 73 & 78: Cumulative Effects/Impacts**

Petitioners' Claims 73 and 78 state that Powertech's license application does not assess potential cumulative impacts associated with past uranium mining and other currently licensed conventional and ISR facilities. Petitioners' Request at 53-54. These Claims do not offer any explanation as to what portions of Part 40.9 require Powertech to assess cumulative impacts in the manner prescribed by Petitioners. Further, Petitioners' statements are mere opinion and are not supported by any cited expert opinion or other regulatory references that demonstrate why Powertech's assessment of cumulative impacts are inadequate. *See Fansteel*, 58 NRC at 203 ("A petitioner's issue will be ruled inadmissible if the petitioner 'has offered no tangible information, no experts, no substantive affidavits,' but instead only 'bare assertions and speculation'"). Without more, these Claims do not support and admissible contention and should be rejected.

**i. Claim 80: NEPA**

Petitioners' Claim 80 states that Powertech did not properly assess the "no-action" alternative in its license application. Petitioners' Request at 54. This Claim does not support an admissible contention as it does not have a basis in law. Petitioners do not offer any explanation as to how Part 40.9 required that Powertech supply a particular type of information regarding assessment of alternatives, including the "no-action" alternative. Further, Petitioners do not offer any legal basis for what they allege as "real consideration" of the "no-action" alternative. Without more, this Claim does not support an admissible contention and should be rejected.

**iii. Alleged Violations of 10 C.F.R. § 40.32(d)**

Powertech has identified each of Petitioners' claims in Contention I that would fall within the parameters of an alleged violation of 10 C.F.R. § 40.9. These claims are copied in order of presentation for the Board's convenience:

"The Applicant's plans do not acknowledge many of the known impacts of the in situ leach mining process and present unacceptable environmental risks. These include:

(91) The Applicant states that placing monitoring wells no more than 400 feet from the production zone and no more than 400 feet apart "will ensure that no leach fluids will pass between the adjacent monitor wells undetected..." (Page 1-19 ER). This makes no sense, as it would be possible for an excursion to pass through an opening at least 300 feet wide without necessarily being detected. Excursions are, of course, common at in situ leach uranium operations. If the Applicant is in denial, rather than in a mindset that expects excursions, it is likely to be less vigilant. Obviously, this increases the risk of major excursions, which is not acceptable.

(92) Multiple spills and leaks involving liquids that are contaminated with radiation and/or heavy metals occur at in situ leach uranium mines. This lack of control and the resulting contamination are not acceptable.

(93) The evidence indicates that the proposed project would have unacceptable impacts on a bald eagle nesting site and on species living on or near land application sites.

(94) This type of project, which would involve large land disturbance in an area with a lot of cultural resources, cannot avoid unacceptable impacts on cultural and historical sites.

(95) Ownership and treaty rights of the Lakota people are not considered in the Application, and the cumulative impacts of uranium mining on those rights are unacceptable.

(96) Use of 2,423 Million gallons of water from the Madison Aquifer and 2,231 Million gallons of water from the Inyan Kara formation is unacceptable, particularly given the semi-arid nature of the region and the reliance on groundwater.

(97) Creation of settling and storage ponds to hold 308,907,127 gallons of toxic liquids is a threat to public health and the environment, given a history of leaks and spills from impoundments at uranium operations.

(98) Water movement in the aquifers that would be impacted is over 1 mile per year. As excursions are common and not always quickly controlled, this presents risks to wells and surface water users within a short time frame.

(99) Existing negative impacts from historical uranium operations, including existing pits and tunnels, air quality, water quality, and stream sediments, argue against further disturbance of the area.

(100) As the Applicant states, “no operations can occur where mine solutions could contaminate [existing] wells” (Section 5.1 Supplement). The reality is that water in the impacted aquifers moves over a mile a year, excursions are predictable, the area is geologically complex, and the nearest wells could become contaminated within the life of the project. Since these factors clearly create a situation in which “mine solutions could contaminate” wells, I am pleased that the Applicant agrees that the Dewey-Burdock project should not occur. I am firmly in favor of the No Action Alternative.”

*See* Petitioners’ Request at 55-56.

In the subsections below, Powertech will categorize these claims into groups that reflect the same generic issue and, where necessary, will specifically address each claim.

**a. Claims 91, 96-98, & 100: Groundwater Quality**

Petitioners' Claims 91, 96-98, and 100 refer to allegations that excursions potentially could migrate through Powertech's proposed monitor well ring for the proposed Dewey-Burdock ISR site and that the site-specific subsurface conditions at the proposed site will create an environment for excursions during operations. Petitioners' Request at 55-56. Many of these alleged Claims overlap with other subsections in this portion of Powertech's brief. Nowhere in any of these Claims have Petitioners offered any specific facts or legal argument regarding how aspects of the proposed Dewey-Burdock ISR project would result in any potential impacts to Petitioners. *See Diablo Canyon*, 56 NRC at 439-441. Petitioners also offer no concrete explanation as to why their allegations would result in potential adverse impacts to any member of Petitioners' group or any plausible pathway through which contaminants generated at the proposed site would migrate to an area where they could cause any member of Petitioners' group harm. *See International Uranium (USA) Corp.* 54 NRC at 253. As a result, these Claims cannot support an admissible contention.

**b. Claims 92 & 97: Surface Water Quality**

Petitioners' Claims #92 and 97 make reference to allegations regarding potential “[m]ultiple spills and leaks involving liquids contaminated with radiation and/or heavy metals occur at in situ leach uranium mines. This lack of control and the resulting contamination are not acceptable.” Petitioners' Request at 55. Claim # 97 alleges that the use of “settling and storage ponds” poses potential threats to public health and safety “given a history of leaks and spills from impoundments at uranium operations.” *Id.* at 56. These Claims cannot support an admissible contention, because they offer nothing more than allegations that relate to historical uranium mining activities and to potential leaks and spills that occurred previously at licensed

sites. However, neither of these Claims offer any information specifically related to the proposed Dewey-Burdock ISR site and any potential impacts that may be caused by its proposed operation. *See Diablo Canyon*, 56 NRC at 439-441. Thus, these Claims cannot support an admissible contention.

**c. Claim 100: Geology and Hydrology**

Petitioners' Claim # 100 raises issues associated with site-specific geology and hydrology at the proposed Dewey-Burdock ISR site. Specifically, this Claim assumes that site-specific, subsurface geologic and hydrologic conditions are present to promote excursions and that "water in the impacted aquifers moves over a mile a year, excursions are predictable, the area is geologically complex, and the nearest wells could become contaminated within the life of the project." Petitioners' Request at 56. This Claim cannot support an admissible contention, as it does not satisfy Part 2.309(f)(1)(v) of the Commission's requirements to provide a concise statement of the alleged facts or expert opinion which support its proposed contention, together with references to those specific sources and documents of which the petitioner is aware, and on which the petitioner intends to rely to establish those facts or expert opinion. *See Georgia Power Company* (Vogtle Electric Generating Plant, Units 1 and 2), LBP-94-22, 40 NRC 37, 39 (1994). Claim #100 does not point to any specific expert opinions that support Petitioners' claim about site-specific subsurface conditions that will promote excursions and subsequent migration of recovery solutions off-site, which would be contradictory to normal hydro-geological conditions associated with ISR-amenable uranium roll-front deposits. *See Powertech's Response to Petitioners' Request*, Pages 11-18 *supra*. Further, Petitioners' Claim does not raise a genuine dispute with the applicant on an aspect of its license application, as Petitioners have not referred to any expert opinions or information that demonstrates that their assessment of the site-specific

subsurface aspects of the proposed Dewey-Burdock ISR site. *See Diablo Canyon*, 56 NRC at 439-441. In addition, Petitioners cannot claim any potential harm to public health and safety based solely on an unsupported allegation of groundwater flow rates that are unsubstantiated by any expert testimony. Thus, this portion of Contention I cannot support an admissible contention.

**d. Claim 94: Land and Surface Uses**

Petitioners' Claim #94 in Contention I alleges that "[t]his type of project...cannot avoid unacceptable impacts on cultural and historical sites." Petitioners' Request at 56. This allegation apparently refers to alleged potential impacts to historic or cultural resources at or near the proposed Dewey-Burdock ISR site. Petitioners are required by Commission regulations to provide a concise statement of alleged facts or expert opinion(s) that support a contention. Further, Petitioners are required to provide some basis that demonstrates a genuine dispute with the applicant on a material issue of law or fact. *See Diablo Canyon*, 56 NRC at 439-441. This Claim provides no details whatsoever regarding any issue associated with how the land disturbance associated with the proposed Dewey-Burdock ISR project will result in "unacceptable" impacts and, therefore, is unsupported conjecture. *See Diablo Canyon*, 56 NRC at 439-441. Thus, this portion of Contention I should be rejected.

**e. Claims 94 & 95: Historic and Cultural Resources**

Petitioners' Claims #94-95 raises issues regarding use of lands associated with Tribal interests and potential impacts on historic and cultural resources. Petitioners' Request at 56. These Claims do not support an admissible contention, as they do not offer any facts or expert opinion regarding what aspects of the proposed Dewey-Burdock ISR project would cause potential impacts on cultural resources. Further, Claim #95 does not offer any information

regarding how ownership and/or treaty rights of the Lakota people would be affected by any aspect of the proposed project. Petitioners also have offered no information regarding why they are in a position to assert the rights of entities such as the Lakota people when no member of the Petitioners' group has asserted that they are a member of the Lakota people. Without some description of the specific facts or any expert testimony that would pertain to how potential harm could result from the proposed project to Petitioners, Claims 94 & 95 cannot support an admissible contention as they cannot provide some dispute as to a material factual element of the proposed project. *See Diablo Canyon*, 56 NRC at 439-441.

**f. Claim 93: Ecology**

Petitioners' Claim #93 alleges that the proposed Dewey-Burdock ISR project will "have unacceptable impacts on a bald eagle nesting site and on species living on or near land application sites." Petitioners' Request at 55-56. This Claim does not support an admissible contention because it does not offer any site-specific circumstances that would result in a determination that the proposed Dewey-Burdock ISR project would result in harm to any animal species. Petitioners do not offer any "reasonable specificity" for a claim that a bald eagle nesting location would be endangered by the proposed project. Petitioners do not offer any geographic coordinates or other locations that demonstrate that a bald eagle nesting location is present anywhere near the proposed site. The Commission's requirements for admissible contentions require that the bases for each contention be set forth with reasonable specificity. *See Wisconsin Electric Power Co. (Point Beach Nuclear Plant, Unit 1)*, LBP-82-108, 16 NRC 1811, 1821 (1982). Without more, this aspect of Petitioners' Contention I cannot support an admissible contention.<sup>19</sup>

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<sup>19</sup> Powertech's environmental report, Section 4.7 specifically addresses issues associated with potential ecological impacts, including those associated with bald eagle nesting areas. However, Petitioners' offer

**g. Claims 95 & 99: Cumulative Effects/Impacts**

Petitioners' Claims 95 and 99 also raise issues with potential cumulative impacts associated with uranium mining to the Lakota people and that "existing negative impacts from historical uranium operations." These Claims do not support an admissible contention, as they do not satisfy the Commission's requirements that a contention be pleaded with specific facts or expert testimony that demonstrate Petitioners' basis for their contention. Nowhere in either Claim do Petitioners offer any specific facts or expert testimony regarding potential impacts from cumulative impacts of uranium mining or impacts from historical uranium mining operations that potentially could cause impacts to any member of Petitioners' group, none of whom are Lakota people. Petitioners have offered no basis, let alone a credible one, that historical activities or the current proposed Dewey-Burdock ISR project will cause any impacts to Petitioners. Thus, this Claim cannot support an admissible contention.

**10. Contention J: Alleged Violation of 10 CFR §§ 51.45(c) & (e) for Failure to Adequately Describe Geologic Conditions That Potentially Could Lead to Groundwater Contamination**

Petitioners' Contention J states that Powertech's Dewey-Burdock license application violates 10 C.F.R. § 51.45 (c & e), because it fails to "describe the extent to which the affected area contains faults and fractures horizontally and vertically between aquifers...." Petitioners Request at 56. Contention J refers to the potential for migration of contaminants such as "thorium, radium 226 & 2[2]8, arsenic and other heavy metals" from the proposed Dewey-Burdock site due to the failure to describe the "extent to which the affected area" will be impacted by this information.

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no concrete or particularized allegations or information to refute this analysis. Thus, Petitioners have not offered a genuine dispute on a material fact or legal issue associated with the Dewey-Burdock license application.

Contention J should not be admitted for the same reasons as Contentions D, F, and H above. As discussed above, Part 51.45 prescribes parameters for information to be submitted in a license application's environmental report, but it does not prescribe any form or specificity requirements for the type or extent of information that should be included in such environmental report. Powertech's environmental report contains several sections that directly address geologic conditions at the proposed Dewey-Burdock site. For example, Section 2.2 entitled *Site-wide Hydrology* and Supplemental Exhibit 3.2-2, as well as Section 2.3.1 on *Breccia Pipes* provide a discussion of specific aspects of the proposed Dewey-Burdock site's geologic and hydrologic aspects that serve as a basis for how ISR process controls will be tailored to the site and controls will be implemented to guarantee that public health and safety and the environment are adequately protected. Powertech's environmental report also contains several sections that directly address issues of seismicity, capable faults, "the randomly occurring 'floating' earthquake," and regional potentiometric surfaces, as well as information regarding the Dewey proposed action area, Dewey pump test conclusions and descriptions of the Minnelusa and Madison aquifers. See Powertech Environmental Report at Sections 2.7.2.1.3, 2.7.2.1.4, 2.7.2.2.12.1, 2.7.2.2.15.2, 3.3.6.1, 3.3.6.2, 3.3.6.2.2, 3.3.6.2.3 & 3.4.3.1.8. Thus, Petitioners are incorrect in their assertion that "the Application fails to describe the extent to which the affected area contains faults and fractures horizontally and vertically between aquifers.

With this information being present in Powertech's license application, Petitioners' statements that its Dewey-Burdock license application does not describe these items in violation of 10 C.F.R. §§ 51.45 (c & e) cannot support an admissible contention. As stated above, Part 51.45 does not prescribe any form or specificity requirements for information to be submitted in a license applicant's environmental report. Contention J does nothing more than insist that a

violation of Part 51.45 has occurred because information submitted on a given issue in Powertech's environment report is inadequate. Given that a violation of Part 51.45 cannot occur based merely on a claim of "inadequacy," Contention J does not allege a specific error of law. Therefore, Contention J should not be admitted.

**V. CONCLUSION**

For the reasons discussed above, Powertech respectfully submits that the Petitioners' have failed to demonstrate that they have standing to intervene pursuant to 10 C.F.R. § 2.309(d). In the event that it is determined that Petitioners have standing, Powertech respectfully submits that they have not proffered any admissible contentions pursuant to 10 C.F.R. § 2.309(f)(1). Accordingly, Petitioners' request should be denied.

Respectfully submitted,

**/Signed (electronically) by/  
Christopher S. Pugsley, Esq.**

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Dated: April 12, 2010

**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of:	)	
	)	
	)	Docket No.: 40-9075-MLA
POWERTECH (USA), INC.	)	
	)	Date: April 12, 2010
	)	
(Dewey-Burdock In Situ Uranium Recovery	)	
Facility)	)	
<hr/>	)	

**CERTIFICATE OF SERVICE**

I hereby certify that copies of the foregoing “APPLICANT POWERTECH (USA) URANIUM CORPORATION’S RESPONSE TO CONSOLIDATED PETITIONERS’ REQUEST FOR A HEARING/PETITION FOR INTERVENTION” in the above-captioned proceeding have been served via the Electronic Information Exchange (EIE) this 12<sup>th</sup> day of April 2010, which to the best of my knowledge resulted in transmittal of the foregoing to those on the EIE Service List for the above captioned proceeding.

Respectfully Submitted,

**/Executed (electronically) by and in  
accord with 10 C.F.R. § 2.304(d)/  
Christopher S. Pugsley, Esq.**

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Dated: April 12, 2010