UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of	)	
	)	
POWERTECH (USA) INC.	)	Docket No. 40-9075-MLA
	)	ASLBP No. 10-898-02-MLA-BD01
(Dewey-Burdock In Situ Uranium Recovery Facility)	)	

OPENING WRITTEN TESTIMONY OF DR.DONALD KELLEY

A BRIEF SUMMARY OF HEALTH HAZARDS ASSOCIATED WITH ISL URANIUM MINING

The settling-pond accumulation, surface spraying, intra-aquifer injection, and processing of metallic-ion-enriched fluids (in this case including radionuclides) poses definite public-health issues related to atmospheric (evaporative and particulate) dissemination, soil/crop/livestock incorporation, and aquifer contamination.

Regarding low-level radiation hazards, various authorities have attempted to determine a "safe" dose of human radiation exposure above background levels. Despite such efforts, there are strong arguments concluding that any increase above background creates a linearly-increased risk of biologic injury, i.e., there is no harmless increase in radiation exposure. While the quantifiable risk to the human population in a mining region may be small, probability dictates that an increased incidence of disease and death will occur. Radiation-induced abnormalities are largely due to cumulative mutagenic damage to chromosomal DNA, resulting in various abnormalities in fetal development as well as later-life disease states. Women and children have been shown to have special sensitivity to the effects of ionizing radiation.

The so-called heavy metals, (including such ions as arsenic, selenium, vanadium and others in addition to uranium) are liberated by the lixiviant solution in ISL mining. In some cases, the toxic effects of particular metallic elements are distinctive (e.g., the skin effects of arsenic, or uranium-induced renal disease), but

these substances generally show detrimental effects on multiple body systems, often including carcinogenesis in various tissues, and adverse effects on the development and function of the neurologic system. Bioaccumulation of these elements through the food web can result in higher concentrations in animal products.

SD MEDICAL SOCIETY RESOLUTION

Due to my concerns, and the concerns of other health professionals about the proposed ISL mining of a major water resource aquifer in the Black Hills, the SD Medical Society passed a Resolution in 2013 opposing, for health reasons, the licensing or permitting of ISL mines in our State.

Dated this *20th* day of June, 2014.

/s/ Donald Kelley
DONALD KELLEY