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## **Informational Sheet- Potassium Iodide (KI)**

**PURPOSE:** To enable parents and guardians to authorize the administration of Potassium Iodide to children during an emergency at the Beaver Valley Power Station while under school authority.

**BACKGROUND:** Potassium Iodide is a stable compound of iodine in the form of a salt. KI is useful for radiological emergency response; it can be taken orally to saturate the thyroid gland with non-radioactive iodine. It blocks the gland's ability to absorb radioactive iodine released following a nuclear reactor accident.

**EFFECTIVENESS:** A delay in taking KI will reduce or eliminate its effectiveness in blocking the uptake of radioactive iodine by the thyroid. This increases the radiation dose to the thyroid, which increases the risk of thyroid cancer. KI is about 95% effective in blocking radio-iodine deposition in the thyroid if taken several hours before, during, or immediately after inhalation or ingestion. The effectiveness of KI drops to about 50% when taken about 4 hours after exposure. After about eight hours from exposure, the ability to block radio iodine is essentially nonexistent.

KI is only effective against radio iodine and provides no protection from other inhaled or ingested mixed fission products that are also released during a nuclear power plant loss of containment accident. KI provides no protection against the external radiation exposure from an airborne release of radioactive material, or from radioactive material that has fallen to the ground. Prolonged external radiation exposure dose can cause serious health consequences.

**SENSITIVITY:** The administration of KI at thyroid blocking doses is generally safe for most adults and children if taken in appropriate doses for only a few days. Potential side effects of KI are small. However, persons with known iodine-sensitive conditions should avoid KI. The guidance from the FDA indicated that iodine sensitive conditions include dermatitis associated with complications of celiac disease, Graves' disease, enlargement of the thyroid, auto-immune thyroiditis, and inflammation of the blood vessels due to lack of immune response mechanism in the blood.